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**INDIAN, JAPANESE, AND U.S. RESPONSES TO
CHINESE SUBMARINE MODERNIZATION**

by

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March 2016

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MODERNIZATION**

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ABSTRACT

Nations in the Asia-Pacific region are modernizing their naval fleets, and many are choosing to use submarines as the centerpiece of these plans. China, one of the most influential nations in the region, has upgraded its submarine force, and it is important to analyze the impact this modernization effort will have on the stability of the region. India, Japan, and the United States are closely watching the People's Liberation Army Navy's (PLAN's) submarine force to understand better China's intentions writ large, and the implications they have for security. All three nations have reacted in response to the PLAN's modernization goal. This thesis concludes that the most effective policy going forward would be a balanced combination of both hard and soft hedging (including dialogue with the PLAN) to defend allied security interests but also to provide avenues for promoting future regional stability.

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LIST OF ACRONYMS AND ABBREVIATIONS

A2/AD	anti-access/area denial
AHCDS	Automatic Helicopter Combat Direction System
AIP	air-independent propulsion
ASCM	anti-ship cruise missiles
ASEAN	Association of Southeast Asian Nations
ASROC	anti-submarine rockets
ASW	anti-submarine warfare
BMD	ballistic missile defense
CCP	ruling party of the People's Republic of China
DOD	Department of Defense
EAS	East Asian Summit
EEZ	exclusive economic zones
FDI	foreign direct investment
FDNF	Forward Deployed Naval Forces
FY	fiscal year
ICBM	intercontinental ballistic missile
IN	Indian Navy
IOR	Indian Ocean Region
JMSDF	Japan Maritime Self-Defense Force
JSDF	Japan Self-Defense Forces
LRMR	long-range maritime reconnaissance
MAD	magnetic anomaly detector
MIRV	multiple independently targetable reentry vehicle
MTDP	Mid-Term Defense Program
NDPG	National Defense Program Guidelines
NEFA	North East Frontier Agency
NFU	no-first-use
NIDS	National Institute for Defense Studies
PLAN	People's Liberation Army Navy
PRC	People's Republic of China

RIMPAC	Rim of the Pacific Exercise
SLBM	submarine-launched ballistic missile
SLOC	sea line of communication
SS	diesel-electric patrol submarine
SSBN	nuclear ballistic missile submarine
SSG	diesel-electric guided missile submarine
SSK	hunter killer submarine
SSM	surface-to-surface missiles
SSN	nuclear submarine
TAC	Treaty of Amity and Cooperation
UNCLOS	United Nations Convention on the Law of the Sea

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

In recent years, the Chinese People's Liberation Army Navy (PLAN) has developed its submarine force with its nuclear-powered attack (SSN) Type 093 (Shang-class) and nuclear-powered ballistic missile submarine (SSBN) Type 094 (Jin-class) submarines. Discussions have also transpired regarding follow-on SSBNs (Type 095) and attack submarines (Type 096).¹ Other recent improvements the Chinese have made to their fleet include a recent purchase of diesel-electric Kilo-class submarines from Russia, increases in its domestically produced diesel-electric inventory, and employment of advanced long-range and short-range anti-ship cruise missiles (ASCM), both subsonic and supersonic.² China will increase the capacity of its SSBNs through the ability to carry the JL-2 submarine-launched ballistic missile (SLBM), which creates the potential for a nuclear second-strike capability.³ Finally, the PLAN has added air-independent propulsion technology to its diesel-electric submarines that greatly increases their operational range and allows them to perform ultra-quiet operations.⁴

Historically, the Chinese submarine fleet mainly has operated within the first island chain, an area encompassed by the East and South China Sea. With all these upgrades, PLAN submarines now possess the capability to deploy outside the second island chain, to include the Pacific and Indian Ocean, which increases their operational range.⁵ The Chinese submarine fleet may be used to protect assets, such as shipping vessels, as China claims, but other nations may not view the PLAN's undersea

¹ Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century* (Washington, DC: Office of Naval Intelligence, 2015), 18–19, http://www.oni.navy.mil/Intelligence_Community/china_media/2015_PLA_NAVY_PUB_Interactive.pdf.

² Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014* (Washington, DC: Office of the Secretary of Defense, 2014), 7–8.

³ Ibid.

⁴ Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, 19.

⁵ Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities-Background and Issues for Congress* (CRS Report No. RL33153) (Washington, DC: Congressional Research Service, 2010), 5.

advancements in the same light. Some may see China's recent modernization as threatening. To evaluate these perspectives, it is necessary to examine other nations' maritime and naval strategies.

Given the PLAN submarine modernization, what exactly are the threat perceptions emerging from its force as seen by India, Japan, and the United States? Additionally, how can these nations bolster their submarine capabilities and strategies to counter the Chinese undersea threat? This thesis examines the modernization of the Chinese submarine fleet through these two lenses and asks these questions: How do these three nations interpret the PLAN's submarine advancements and how are they responding to them?

B. SIGNIFICANCE OF THE RESEARCH QUESTION

Since the end of the Cold War, China has been slowly building its forces, specifically, the PLAN. The Chinese seem to be building their submarine fleet to patrol areas much farther past their own coastline and waterways, which will allow them to compete in the undersea domain. India, Japan, and the United States already have undersea forces operating in this area of the region. Peter Howarth writes in *China's Rising Sea Power: The PLA Navy's Submarine Challenge*, "Since the collapse of Soviet naval power, China has become the operator of the world's largest tactical submarine fleet."⁶ In addition to possessing a large fleet, the PLAN has also been rapidly modernizing its submarine fleet. With regard to the submarine fleet of the PLAN, as compared to its other naval vessels, *China's Future Nuclear Submarine Force*, a collection of naval insights on the PLAN, states, "It is now widely recognized that submarines are the centerpiece of China's current naval strategy."⁷ This thesis investigates the submarine fleet's potential threat and why India, Japan, and the United States are concerned over this modernization. This study has implications for future naval policy in regard to anti-submarine warfare and locations of conflict due to the presence of the PLAN submarine force.

⁶ Peter Howarth, *China's Rising Sea Power: The PLA Navy's Submarine Challenge* (New York: Routledge, 2006), i.

⁷ Andrew S. Erickson et al., ed., *China's Future Nuclear Submarine Force* (Annapolis, MD: Naval Institute Press, 2007), x.

C. LITERATURE REVIEW

Chinese literature is limited when discussing plans and intentions of the PLAN submarine force with regard to the capabilities its submarines provide the nation. This literature review covers three topics. First, it provides a definition for the term “modern submarine fleet.” Second, it addresses what advancements the PLAN has made to its submarine fleet in recent years. Third, it examines defense reports and journal articles from India, Japan, and the United States, and analyzes the threat as perceived by these nations.

1. Defining a Modernized Submarine Fleet

A modernized submarine fleet has certain characteristics that distinguish it from a non-modernized fleet. A modern fleet consists of submarines that possess greater capacity to remain undetected and that have the ability to inflict greater harm to an adversary than a non-modern fleet. According to Jesse Karotkin, a senior intelligence officer for the China Office of Naval Intelligence, modern submarines have the ability to employ anti-cruise ship missiles or submarine-launched intercontinental ballistic missiles.⁸ For the purpose of this literature review and thesis, the definition of a modern submarine fleet will have a larger scope to include enhanced quieting technologies, such as air-independent propulsion, and the ability to employ anti-cruise ship missiles, advanced torpedoes, and submarine-launched ballistic missiles.

2. The PLAN Submarine Modernization

The PLAN has recently added technological improvements to its submarine force and shows no sign of slowing down. Its advancements can be divided into several categories: quantity, power projection, and sea patrol range. The capacity of its submarine force has increased tremendously in the last 10 years, and by 2015, 70 percent of its approximately 60 submarines should be modernized.⁹ The PLAN’s newest type of

⁸ *China’s Military Modernization and its Implications for the United States, Before the U.S.-China Economic and Security Review Commission*, 113th Cong., 8 (2014) (statement of Jesse Karotkin, Senior Intelligence Officer for China Office of Naval Intelligence).

⁹ *China’s Military Modernization and its Implications for the United States, Before the U.S.-China Economic and Security Review Commission*, 8.

nuclear-powered SSBN, the Jin-class, is operational and it currently has three in service, although it still lacks a missile (despite the Defense Intelligence Agency's repeated prediction that it would be operational for the past five years).¹⁰ China's capacity to operate in the undersea domain has increased with its large quantity of modern submarines.

The power projection capability of a submarine depends on the weapons carried by the submarine and its ability to use the weapons. The Jin-class SSBNs are intended to carry the JL-2 SLBM, with a range of 7,400 kilometers.¹¹ Reports have concluded that the PLAN has achieved a successful launch of the JL-2 from the Jin-class but has yet to deploy.¹² Once this accomplishment occurs, the PLAN will greatly improve its ability to achieve a second-strike nuclear capability. The SSBN's ability to remain covert and to avoid antisubmarine warfare, though, will still remain in question. In addition to nuclear weapons, China received advanced anti-ship cruise missiles (ASCM) from Russia, the SS-N-27 Sizzler, which are some of the most capable missiles that China owns.¹³ These can be launched from many of its hunter killer submarines (SSKs) and all of its SSNs.

Sea patrol range for the PLAN has increased with its recent deployments to the Indian Ocean, when China deployed its SSN in an effort to increase its training and readiness and to evaluate its ability to protect vital sea-lanes of communication.¹⁴ China first began to increase its submarine operations between 2002 and 2004, when it launched 13 submarines.¹⁵ The PLAN furthered its submarine capabilities with increased surface and submarine "combat readiness deployments" beginning in 2007 with six and then

¹⁰ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, 7.

¹¹ *Ibid.*, 8.

¹² Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, 16.

¹³ O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities-Background and Issues for Congress*, 16.

¹⁴ U.S.-China Economic and Security Review Commission, *2014 Report to Congress* (Washington, DC: U.S. Government Printing Office, 2014), 254.

¹⁵ Andrew S. Erickson and Lyle J. Goldstein, "China's Future Nuclear Submarine Force: Insights from Chinese Writings," *Naval War College Review* 60, no. 1 (Winter 2007): 55.

adding an additional 28 in 2013.¹⁶ In 2014, Chinese officials announced that the PLAN conducted its first “combat readiness patrol” to the Indian Ocean that involved both surface ships and submarines.¹⁷ China is likely to continue to operate its submarines further away from its own coast to improve the tactical readiness of its fleet.

3. Literature from India

Studies that discuss how India regards the PLAN generally agree that a threat exists. Even though the two nations have been cooperating economically and politically, distrust still remains in the military realm. An examination of India’s Ministry of Defence Annual Reports reveals that every report since 1992 has mentioned China.¹⁸ Overall, the theme from the reports is that India wants to improve relations with China and that it has been attempting this through joint military exercises and official diplomatic meetings. However, India does not fully trust China. India’s past three annual reports (2013–2014, 2012–2013, and 2011–2012) all have the phrase, “China is a major factor in India’s security calculus.”¹⁹ With this statement from India, what specifically threatens its security: land forces, air forces, surface naval forces, or a submarine force?

Arun Prakash, former chief of naval staff of the Indian Navy, states, “China has undertaken an extensive modernization of its nuclear arsenal and now fields medium-yield weapons, carried by longer-range and more accurate DF-21 and -31 land-based ballistic missiles, along with JL-2 submarine-launched ballistic missiles.”²⁰ Prakash acknowledges a threat from submarine-launched ballistic missiles and later details why the threat exists. He observes that the United States and China signed an agreement

¹⁶ “U.S.-China Economic and Security Review Commission,” 284–85, November 2014, www.uscc.gov.

¹⁷ *Ibid.*, 255.

¹⁸ John Garver, “Asymmetrical Indian and Chinese Threat Perceptions,” *Journal of Strategic Studies* 25, no. 4 (June 4, 2010): 110, doi:10.1080/01402390412331302885.

¹⁹ Ministry of Defence, *Annual Report, 2013–2014* (New Delhi: Government of India, 2014), 7, <http://www.mod.nic.in/writereaddata/AnnualReport2013-14-ENG.pdf>; Ministry of Defence, *Annual Report, 2012–2013* (New Delhi: Government of India, 2013), 6; Ministry of Defence, *Annual Report, 2011–2012* (New Delhi: Government of India, 2012), 6.

²⁰ Arun Prakash and Yang Yi, “Bridging Historical Nuclear Gaps,” in *The China-India Nuclear Crossroads*, ed. Lora Saalman (Washington, DC: Carnegie-Tsinghua, 2012), 18.

known as the “non-targeting” agreement, where each nation would not target the other with nuclear weapons. Prakash argues that, “The biggest and perhaps most dangerous lacuna in this [Indo-Sino] relationship is the lack of an official dialogue on nuclear issues.”²¹ Prakash wishes for India and China to discuss their nuclear issue openly in the hopes that India could have an agreement like the one the United States has with China. Another Indian leader, Uday Bhaskar, a former commodore of the Indian Navy, is also concerned regarding nuclear weapons that the Chinese possess. He states, “The modernization of the Chinese arsenal draws much concern within India for its impact on the bilateral relationship.”²² Through defense reports and former Indian naval officers, it is clear that India perceives a threat from China with regard to its nuclear weapons.

The threat in India not only stems from nuclear weapons. The two nations have a history of conflict, which has left some issues unresolved and highlights some critical uncertainties regarding the Sino-Indian relationship. An advanced submarine force adds another layer to the sources of conflict. A critical uncertainty is how China interacts with Indian neighbors, creating a complex situation. One nation that China has cooperated with recently is Sri Lanka. *Jane’s Navy International* reported online that the PLAN had submarine port calls to Colombo in Sri Lanka once in September 2014 and then again in November 2014.²³ Indian Naval Commander Sibapada Rath argues that China’s actions are clear when he states, “The encirclement of India is evident through all sides of Chinese development.”²⁴ China has also increased its military ties with Pakistan through a submarine deal that provides the Pakistan Navy with eight submarines to be fully operational by 2025.²⁵

²¹ Ibid., 20.

²² C. Uday Bhaskar and Hongyi Nie, “Comparing Nuclear Pledges and Practice,” in *The China-India Nuclear Crossroads*, ed. Lora Saalman (Washington, DC: Carnegie-Tsinghua, 2012), 37.

²³ C. Uday Bhaskar, “Strategic Sustainment? China’s Ships, Silk Roads, and Indian Ocean Presence,” *Jane’s Navy International*, November 13, 2014, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1728227&Pubabbrev=JNI>.

²⁴ Sibapada Rath, “Maritime Strategy of India and China: Influence of Alfred Thayer Mahan,” *Naval War College Journal (India)* 26 (2014): 79.

²⁵ Farhan Bokhari, “China, Pakistan Set for Submarine Deal by End of Year, Say Officials,” *Jane’s Defence Weekly* 51, no. 11 (February 5, 2014), <http://search.proquest.com.libproxy.nps.edu/docview/1493953453/abstract/EEC7C153EC334B70PQ/1>.

The PLAN is likely to have an increased presence in the region as it increases its deployments and port calls in the Indian Ocean, and relations with other nations surrounding the region. As China increases its ties with certain states, it may cause opposing states to rally together in an attempt to counter the Chinese presence. Indian analyst Sandip Kumar Mishra argues, “China’s growing maritime assertiveness in recent years appears to be counter-productive for Beijing, as it has led to an evolution of a broader network to deal with China.”²⁶ It seems that India may broaden its relations, as it will not want to face China alone.

4. Literature from Japan

While India focuses on Chinese nuclear weapons, as well as unresolved issues of the past, the literature from Japan has identified that China poses as a long-term security threat with more aspects than just weapons. This section first examines Japanese Defense white papers, then National Defense Program Guidelines (NDPG), and finally reports from National Institute for Defense Studies (NIDS) in Japan. Its white papers have identified eight major items themes regarding Chinese military affairs, four of which this review analyzes: defense policies, military transparency, national defense budget, and military posture as they relate to submarines.²⁷ The first theme, defense policies, states, “China is believed to be strengthening its military forces with its top priority foremost in mind, namely, dealing with the Taiwan issue, more specifically, improving China’s capabilities to hinder the independence of Taiwan and foreign military support for the independence of Taiwan.”²⁸ Japan understands that it is not regarded as an immediate threat to China, but Japan recognizes a threat exists as China builds its strength and increases its capabilities.

The second theme listed by the Japanese is the lack of military transparency by the PLAN. As the PLAN increases its military strength, China fails to reveal its vision for

²⁶ Sandip Kumar Mishra, “China’s Maritime Assertiveness and Repercussions,” *Institute of Peace and Conflict Studies*, December 7, 2015, <http://www.ipcs.org/article/china/chinas-maritime-assertiveness-and-repercussions-4940.html>.

²⁷ Ministry of Defense, *Defense of Japan 2014* (Tokyo: Ministry of Defense, 2014), 33–46.

²⁸ *Ibid.*, 33.

the military and the PLAN.²⁹ An early example of Chinese lack of transparency occurred in 2004 when the PLAN navigated its nuclear-powered SSNs into Japanese territorial waters. The *Asian Wall Street Journal* described this incident as, “the most serious between the two Asian giants since World War II.”³⁰ The PLAN conducts military activity without an explanation, and Japan claims that after these types of events, the Chinese Ministry of National Defense and Ministry of Foreign Affairs are never truthful about the actual intent of the operations.³¹

The third theme is China’s national defense budget, which has been steadily growing and has almost quadrupled in the last 10 years alone, according to Japan’s Ministry of Defense.³² China’s actual defense budget has not been officially released, but China even reports that the budget has increased by double digits every year since 1989.³³ Christopher Hughes writes that Japan has responded to China’s increase in submarine spending by procuring new anti-submarine warfare capable ships, helicopters, and P-3C patrol aircraft of its own.³⁴ Also in response to Japan’s buildup, *Jane’s Defense Weekly* posted online, “The JMSDF is addressing concerns over China’s modernization of its submarines by increasing the force’s anti-submarine warfare capabilities. This includes efforts to grow the size of the submarine fleet from 16 to 22 boats.”³⁵ Japan is demonstrating that it will continue to fund antisubmarine warfare (ASW) capabilities to counter the PLAN.

²⁹ Ministry of Defense, *Defense of Japan 2014*, 34.

³⁰ Martin Fackler, “Japanese Pursuit of Chinese Sub Raises Tensions; Incident Was Most Serious Since World War as Two Vie For Sites in East China Sea,” *Asian Wall Street Journal*, November 15, 2004.

³¹ Ministry of Defense, *Defense of Japan 2014*, 34.

³² *Ibid.*, 35.

³³ U.S. Congress, *U.S.-China Economic and Security Review Commission* (Washington, DC: U.S. Congress, 2014), 287.

³⁴ Christopher W. Hughes, “Japan’s Response to China’s Rise: Regional Engagement, Global Containment, Dangers of Collision,” *International Affairs* (Royal Institute of International Affairs 1944–) 85, no. 4 (2009): 845.

³⁵ James Hardy, “Japan’s New Dawn,” *Jane’s Defence Weekly*, November 5, 2014, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1727319&Pubabbrev=JDW>.

The last item is military posture, which discusses China's missiles, nuclear forces, and its naval operations. Japan states that China possesses a range of missiles from intercontinental to submarine-launched ballistic missiles.³⁶ Japan believes that "China is working to increase performance by extending ranges, improving accuracy, mounting warheads, and other means."³⁷ In addition, China is developing its JL-2 missile, and when it becomes operational, "China's strategic nuclear capabilities will improve by a great margin."³⁸ China's advancing missile technology, coupled with its submarine force, could be problematic for Japan. Japan, in response to Chinese modernization, states, "it is necessary to continue to monitor the development of the Chinese naval forces."³⁹ Japan perceives China to be a potential threat, as it witnesses more spending by the PLAN, and operations close to Japanese territory. Captain Takuya Shimodaira, the first Japan Maritime Self-Defense Force (JMSDF) liaison officer assigned to the U.S. Naval War College as an International Fellow, describes the perceived Chinese threat:

Japan is capable of assuming proportionate responsibility for the safety and security of the seas in the Asia-Pacific region. While China continues to expand its presence in the South China Sea and the East China Sea, a realistic approach for Japan involves the promotion of multiagency and multilateral cooperation in the maritime domain. Japan will protect its national interests through military and nonmilitary means, while pursuing a position of regional leadership.⁴⁰

Captain Shimodaira explains that the future does not involve maintaining the status quo. Japan will have to continue to bolster its own defenses, as well as strengthen its alliances. Chinese naval operations, as witnessed by Japan, have been building up to conduct operations in more distant waters. Japan has observed maritime exercises and monitoring activities, which were conducted to protect China's maritime rights and interests. While China's exercises have not entered into Japan's territorial waters, Japan

³⁶ Ministry of Defense, *Defense of Japan 2014*, 36.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid., 39.

⁴⁰ Takuya Shimodaira, "The Japan Maritime Self-Defense Force in the Age of Multilateral Cooperation: Nontraditional Security," *Naval War College Review* 67, no. 2 (Spring 2014): 62.

warns that any intrusion would be perceived as, “dangerous act that could cause unintended consequences.”⁴¹

In addition to Japan’s white papers, its National Defense Program guidelines offer another look into the Chinese threat. An examination into these reports reveals that in 2010, Japan shifted its military strategy to respond to current threats. In its 2010 report, Japan states that it will abandon its “Basic Defense Force Concept” in lieu of a “Dynamic Defense Force,” which offers “readiness, mobility, flexibility, sustainability, and versatility.”⁴² In its NDPG released in 2013, Japan states that China is increasing its asymmetrical military capabilities, referring to the Chinese anti-access area denial (A2/AD) concept. This increase is problematic for Japan because of the lack of transparency by the Chinese military. Japan’s concern regarding China’s military capability, as it relates to regional and global security, are one reason it has shifted to a dynamic force.⁴³ Japan’s Mid-Term Defense Program 2011–2015 (MTDP), which seeks to align the capabilities of the military to meet the standards set forth in the NDPG, highlights a plan to build up its maritime forces. A direct result of China’s modernization, the MTDP instructs Japan to strengthen its submarine and antisubmarine capabilities and to increase its missile defense to counter Chinese ballistic missiles, land-attack cruise missiles, and ASCMs.⁴⁴ Japan views Chinese submarines as a threat, and with its increased spending on ASW, is attempting to counter the PLAN’s capabilities.

Finally, literature from NIDS in Japan is analyzed. In its *NIDS China Security Report 2011*, the authors discuss their concern over the role that China’s growing submarine strength will play as part of its maritime strategy. One theory is that the PLAN will use A2/AD tactics to counter a force entering the first island chain by employing

⁴¹ Ministry of Defense, *Defense of Japan 2014*, 40.

⁴² Ministry of Defense, *National Defense Program Guidelines for FY 2011 and Beyond* (Tokyo: Ministry of Defense, 2010), 7, http://www.mod.go.jp/e/d_act/d_policy/pdf/guidelinesFY2011.pdf.

⁴³ Ministry of Defense, *National Defense Program Guidelines for FY 2014 and Beyond* (Tokyo: Ministry of Defense, 2013), 3–4, http://www.mod.go.jp/j/approach/agenda/guideline/2014/pdf/2013_1217_e2.pdf.

⁴⁴ Bjorn Elias Mikalsen Gronning, “Japan’s Shifting Military Priorities: Counterbalancing China’s Rise,” *Asian Security* 10, no. 1 (2014): 5–6, doi:10.1080/14799855.2013.870157.

anti-ship cruise missiles on its submarines.⁴⁵ A second concern is how China will use its submarines to guarantee security of its sea lines of communication (SLOCS). Japan relies on maritime transport, and China's submarines could have the ability to disrupt activity in the area.⁴⁶ The third concern of NIDS is China's future ability to operate without detection in waters around China because of a new submarine base on Hainan Island. NIDS believes that the base will be an underwater base and the PLAN would be able to launch a submarine without it being detected by other nations.⁴⁷

In addition to security concerns, Tomotaka Shoji argues in an NIDS article that Japan should continue to strengthen its relationship with the United States because the "U.S. Navy's 7th Fleet is the only guarantor of security in the South China Sea" and China will unlikely accept the U.S. role in the region.⁴⁸ Japan desires a stable region, and China, along with its military modernization, is undermining the capacity for stability from the Japanese perspective.

5. Literature from the United States

The literature from the United States regarding the PLAN and its submarine force is vast and detailed. The U.S. Department of Defense (DOD), like Japan, states that China's main focus is preparing for a potential conflict regarding Taiwan. However, the DOD also reports that in addition to Taiwan, China is preparing for contingencies in the South and East China Seas and areas farther away from its coast to increase its sea lane security.⁴⁹ The DOD's annual report to Congress, formerly called "*Military Power Report of the People's Republic of China*," and now titled, "*Military and Security Developments Involving the People's Republic of China*," from 2009–2014, never state

⁴⁵ National Institute Defense Studies, *NIDS China Security Report 2011* (Tokyo: National Institute Defense Studies, 2012, 13, <http://www.nids.go.jp>).

⁴⁶ *Ibid.*, 22.

⁴⁷ *Ibid.*, 23.

⁴⁸ Tomotaka Shoji, "The South China Sea: A View from Japan," *NIDS Journal of Defense and Security* 15 (December 2014), http://www.nids.go.jp/english/publication/kiyo/pdf/2014/bulletin_e2014_7.pdf.

⁴⁹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, i.

that the PLAN submarine fleet poses a direct threat to the United States. However, the reports indicate that the United States must be watchful in this region due to the uncertainty of the PLAN and its use of its submarine force. The DOD states in its 2014 report, “China’s lack of transparency surrounding its growing military capabilities and strategic decision-making has led to increased concerns in the region about China’s intentions.”⁵⁰ Threats from the PLAN submarine could be grouped into two categories. The first would include the capability to attack U.S. aircraft carriers. According to Roger Cliff’s prepared statement before Congress, the Chinese would attempt to attack a U.S. aircraft carrier in a Taiwan invasion scenario using torpedoes and submarine-launched anti-ship cruise missiles. He believes that it would be the most likely scenario for an armed conflict between China and the United States.⁵¹

The second category would involve nuclear weapons carried onboard its submarines and the uncertainty of when the weapons would be used. Unlike the United States, China remains unclear on exact situations that would prompt the use of its weapons. China has a no-first-use (NFU) policy, but remains opaque on its exact interpretation. The DOD states in 2014, “There is some ambiguity over the conditions under which China’s NFU policy would apply, including whether strikes on what China considers its own territory, demonstration strikes, or high-altitude bursts would constitute a first use.”⁵² Thomas J. Christensen, director of the China and the World Program at Princeton University, is also concerned. He discusses that future war-fighting using key weapon systems like the modernized submarine, armed with nuclear weapons, may blur the lines between conventional and nuclear war.⁵³ In addition, it is not clear who has the authority to fire nuclear weapons in the PLAN. He goes on further to say that the United States and its allies should increase their capabilities to hunt submarines to increase the

⁵⁰ Ibid., 16.

⁵¹ *China’s Military Modernization and its Implications for the United States, Before the U.S.-China Economic and Security Review Commission*, 113th Cong., 120–121 (2014) (prepared statement of Dr. Roger Cliff, Senior Fellow, Atlantic Council).

⁵² Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2014*, 28.

⁵³ Thomas J. Christensen, “The Meaning of Nuclear Evolution: China’s Strategic Modernization and US-China Security Relations,” *Strategic Studies* 35, no. 4 (2012): 470–72, doi:10.1080/01402390.2012.714710.

difficulty for the PLAN to communicate with its submarine commanders while at sea.⁵⁴ The United States faces many implications concerning the Chinese submarine force whether it is involving conventional attacks or deterrence with nuclear weapons. Each of these topics requires further investigation.

A more tempered view of the threat posed by the PLAN appears in the book *Red Star over the Pacific: China's Rise and Challenge to the U.S. Maritime Strategy*, published by Naval War College. Toshi Yoshihara and James R. Holmes observe that while the PLAN may possess a plethora of submarines and missiles, the people who operate the equipment are not as skilled as those of other nations. The authors state, "The Chinese navy still has a long way to go in "software" areas such as training, education, seamanship and the myriad of other skills that comprise battle readiness."⁵⁵

D. RELEVANT SECURITY CONCEPTS

Countering submarines may be difficult for states to address in their security concept. Submarines can be seen as threatening based on certain capabilities, but also may be viewed as a defensive tool for other states. For states to understand better if submarines pose a threat, they must understand the capabilities that states possess. This section first discusses what role submarines play in a security dilemma, and then it analyzes the potential, and finally discusses how states can respond to a potential submarine threat.

1. Security Dilemma

The security dilemma has an important role to play in the East Asia region, and especially in the context of modernized submarines. The modernization of the PLAN submarine fleet may increase conflict in the region due to uncertainty in states' behavior. The term "security dilemma" was coined in 1959 in John Herz's *International Politics in the Atomic Age*. The term was first used to describe how states arm themselves to provide their own security because they are unsure of another state's intentions. However, this

⁵⁴ Ibid.

⁵⁵ Toshi Yoshihara and James R. Holmes, *Red Star over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (Annapolis, MD: Naval Institute Press, 2010), 216.

scenario creates a cycle; other states will be compelled to arm themselves since they are unsure of the other's intentions. This cycle continues because no higher power or authority is controlling the situation or protecting them.⁵⁶ This situation could be in the process of being played out in East Asia as China modernizes its undersea fleet.

Robert Jervis further expanded this theory when he argued that the most dangerous and unstable scenario occurs when offensive weapons are not easily distinguishable from defensive weapons and when the offense has the advantage.⁵⁷ The offense having the advantage means that it is "easier to destroy the other's army and take its territory than it is to defend one's own."⁵⁸ Submarines can easily be seen as both offensive and defensive platforms based on their operating location, silencing capabilities, and weapons payload. Furthermore, the fact that submarines operate under water and out of plain view creates further problems if an opposing state does not possess any type of ASW. Using Jervis' definition, submarines can create an unstable scenario because of the capabilities that they possess, which creates an unknown fear in an adversary.

2. Dangers of Submarines

Submarines have created havoc for nations in the past. The Falklands Campaign between Argentina and Britain provide an example. Argentina owned few submarines, all of which were diesel-electric. However, it was able to use one submarine very effectively during the campaign.⁵⁹ The Royal navy along with NATO's North Atlantic ASW force, Antisubmarine Group 2, one of the best in the world at that time, experienced much difficulty tracking one of Argentina's submarines, the *San Luis*. This lone submarine was able to attack the British Task Force twice, without being detected. The captain of the *San Luis* stated, "I don't think that they knew we were there until they heard our

⁵⁶ John H. Herz, *International Politics in the Atomic Age* (New York: Columbia University Press, 1959), 231.

⁵⁷ Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30, no. 2 (January 1978), 211, <http://www.jstor.org/stable/2009958>.

⁵⁸ *Ibid.*, 187.

⁵⁹ Bryan Perrett, *Weapons of the Falklands Conflict* (London: Blandford Press, 1982), 35.

torpedoes running.” As a result, almost all weapons fired in the British ASW campaign were aimed at false targets.⁶⁰ China owns 53 diesel-attack submarines, and it could easily flood the China Seas and the Indian Ocean with a great deal of undersea power.

Submarines were also used during the Cuban Missile Crisis and the situation could have escalated quickly. The Soviet Union sent four diesel-electric submarines from its 69th torpedo submarine brigade, each armed with 22 torpedoes and a nuclear warhead, for a total of 88 torpedoes and four nuclear warheads.⁶¹ Nuclear weapons on submarines create a new dimension to any crisis or war. To locate the threat of nuclear weapons, a nation will use all available resources to track and subdue the threat. During this period, confusion and misperceptions can cause further conflict. The Soviet captains commanding the submarines in the Cuban Missile Crisis had limited access to information above water. The Soviet submarine captains were also operating on unclear orders, which each boat captain interpreted differently from their superiors, regarding their nuclear weapons. Captain Nikolai Shumkov remembers hearing before he left for the crisis, “if they slap you on the left cheek, do not let them slap you on the right one.”⁶² Another captain recalls other instructions, “I suggest to you, commanders, that you use the nuclear weapons first, and then you will figure out what to do after that.”⁶³ A non-threatening action taken by the United States could be perceived as threatening, and could have caused the Soviets to launch nuclear weapons, then creating a chain reaction. Interviews with the Soviets after the crisis revealed, “All the Soviet captains recalled their state of extreme tension and confusion in a situation where the war above could have begun any time.”⁶⁴ The Soviet submarine captains were operating on vague orders, had little radio connection, and did not want to return home defeated. This situation caused Captain Valentin Savitski, while believing his submarine was under attack, to give the

⁶⁰ Christopher McConaughy, “China’s Undersea Deterrent: Will the U.S. Be Ready?,” in *China’s Future Nuclear Submarine Force* (Annapolis, MD: Naval Institute Press, 2007), 95.

⁶¹ Svetlana V. Savranskaya, “New Sources on the Role of Soviet Submarines in the Cuban Missile Crisis,” *The Journal of Strategic Studies* 28, no. 2 (April 2005): 237.

⁶² *Ibid.*, 240.

⁶³ Savranskaya, “New Sources on the Role of Soviet Submarines in the Cuban Missile Crisis,” 240.

⁶⁴ *Ibid.*, 242.

command of arming their nuclear torpedo for fear of defeat. However, his crew was able to deescalate the situation and they eventually surfaced their vessel.⁶⁵

A third incident involving submarines occurred in March 2010 off the shores of the Korean peninsula. North Korea launched a secretive submarine attack against South Korea and sank the corvette ship *Cheonan*, killing 46 of its sailors.⁶⁶ The *Cheonan* never suspected a submarine attack that night. Due to the covertness of a submarine, it can launch a torpedo or other weapon on its target, without any indications given. Submarines can change the dimensions of a battle or war because of their unique capabilities.

Submarines are sometimes anticipated in battles, but are difficult to engage due to their covert nature. Even when they are anticipated, leaders may have issues during conflicts because of a lack of communication. Other times, submarines are not anticipated, and then strike when an opponent is least ready. Submarines have a large role to play concerning a security dilemma because of the lack of transparency that submarine fleets possess. Submarines may hinder the ability to create a region of stability because states are unsure of the capabilities of another state's submarine fleet.

3. Ways to Respond to the Submarine Threat

Submarines create a complex situation for rival navies and states have a range of options to choose from to determine how they respond to a rising power and the modernization of submarines. On one level—in an attempt to contain the rising power's strength—states can respond either symmetrically or asymmetrically that would be considered “hard hedging.”⁶⁷ These types of response can include enhanced military capabilities to match the opponent, forging military alliances to provide matching military capabilities, or exclusive military exercises with nations that provide symmetrical capabilities.

⁶⁵ Ibid., 246–47.

⁶⁶ Dong Sun Lee, “Causes of North Korean Belligerence,” *Australian Journal of International Affairs* 66, no. 2 (April 2012): 103.

⁶⁷ Jeffrey W. Hornung, “Japan's Growing Hard Hedge against China,” *Asian Security* 10, no. 2 (May 4, 2014): 97–122, doi:10.1080/14799855.2014.914497.

However, states do not have to engage in “hard hedging” to respond to submarine modernization; they can also have a type of relaxed response known as “soft hedging.”⁶⁸ This type of response would be non-military related and can be categorized as a way to increase communication and diplomacy with the goal of increasing stability in the region. “Soft hedging” could be cooperative policies with China, forums that discuss the role submarines, and potential ways to conduct joint operations. In addition, any form of ASW forums, military ASW exercises, or discussions that include China, all with the goal of improving dialogue to understand better intentions to curb future conflicts, could be labeled as a “soft hedging.”

For a state to have a balanced or stable response, it cannot only focus on one category; it must perform both “hard” and “soft” hedging. If a state only takes a soft response, it could jeopardize its own security because China or other states could perceive a state to be weak. A weak state may have its sovereignty infringed upon that may result in a destabilized region. However, if a state only pursues hard responses, other states may feel threatened from a hostile stance because opportunities for diplomacy may not exist. States, as well as regions, would benefit from balanced responses in the hopes of creating areas of certainty and stability. This thesis includes an analysis of states’ response to the Chinese submarine modernization to evaluate if these states are further destabilizing the region with their responses to the PLAN.

E. POTENTIAL EXPLANATIONS, HYPOTHESIS, AND ROADMAP

This thesis presents three hypotheses. The first hypothesis is that other nations will perceive actions to modernize a submarine fleet as threatening and destabilizing to the region because of failure of the CCP, the ruling party of the People’s Republic of China, to offer transparency regarding its military’s intentions. That is, the hypothesis suggests that were China more transparent about its intentions, a similar sized buildup would not be viewed as threatening. India, Japan, and the United States may see China’s ambiguity regarding military doctrine as a reason to strengthen their own ASW capabilities and participate in joint ASW exercises, which may lead to greater strength in

⁶⁸ Ibid., 99.

military alliances. Currently, the only formal military alliance among this triad is between Japan and the United States. Japan and India have entered into security cooperation, but not a formal alliance. The threat from China may push these nations to enter into a formal alliance to signal a “hard” counter balance strategy of China. To create greater stability, these nations will also attempt to balance their own “hard” actions with a “soft” approach.

The second hypothesis is that, as China modernizes its fleet, Japan may attempt to alter its military force by allowing its Self-Defense Force to evolve into a “normal” military. This thesis examines if Japan’s normalization is a direct result of China’s submarine growth or because of an increase in China’s general military growth. This action alone could greatly alter the dynamics in the region, which is why Japan may also want to participate with China in “soft” engagements.

The third hypothesis is that the PLAN submarine developments have created a naval arms race, which could bring less stability to the region. While the PLAN acquires SSBNs, India may acquire more SSNs or SSKs to counter the PLAN, in an attempt not to match the PLAN, but hold at risk its forces. Since Japan is not a nuclear-armed nation, it could increase its SSKs or SSNs, in an attempt to counter the PLAN threat. Japan then may increase its participation in ASW joint military exercises to maintain its proficiency at the highest level.

This thesis uses the comparative case study method by examining three nations, India, Japan, and the United States, and their reactions to the modernization of the PLAN submarine fleet. Each chapter examines the nation’s annual defense reports, academic journals, scholarly reports, and publications to analyze how each nation views China and its submarine fleet, and how its modernization has may create potential conflict between the nations. In addition to these reports and publications, this thesis assesses antisubmarine tactics and strategy, and offers different approaches on the ability to counter the perceived threat.

Chapter II characterizes the Chinese submarine buildup. Chapter III examines the Indian perspective and addresses the issues that India perceives from the PLAN. Chapter

IV offers the Japanese view and analyzes the threat perceptions that it has of the PLAN. Chapter V reviews the PLAN from the U.S. perspective and concludes by offering recommendations on how these nations could counter the Chinese submarine threat through maritime strategies, collective alliance agreements, or policies.

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II. CHINESE SUBMARINE MODERNIZATION

A. BACKGROUND

Since the end of Cold War, the People's Republic of China (PRC) has undertaken efforts to build up its PLAN and undersea forces to challenge the U.S.' naval supremacy in East Asia, as well as other nations in smaller seas.⁶⁹ Chinese Naval Officers, Captain Shen Zhongchang, and Lieutenant Commanders Zhang Haiying and Zhou Xinsheng, argue submarines will become a major naval warfare force, which will increase the need to dominate undersea spaces, as well as increase ASW measures. When the release of Beijing's defense white papers began in 2000 to identify the United States as the most important potential foe, it was clear that the PLAN would have to improve its undersea fleet to have the capacity to challenge the United States.⁷⁰ In 2000, the PLAN submarine fleet consisted of approximately 64 submarines with eight in reserve.⁷¹ Since 2000, the PLAN has created its own derivatives of submarines to include the Ming SSK, the ultra-quiet Yuan SSK, and also added the nuclear-powered Shang SSN, and the most-threatening Jin SSBN.⁷² It is important to analyze submarine growth because the submarine platform has the ability to create greater instability in a region than other platforms because they create a complex security environment.⁷³ These new submarines demonstrate the capacity of the PLAN to strengthen its undersea force, which further complicates the security in the region.

As the PLAN grows in strength and numbers, China allows its military to participate in some international missions, but ultimately, the CCP keeps its military's true intentions to itself. *Jane's Fighting Ships* wrote in 2001, "China is a country that

⁶⁹ Howarth, *China's Rising Sea Power: The PLA Navy's Submarine Challenge*, 9.

⁷⁰ Paul H. B. Godwin, "China's Emerging Military Doctrine: A Role for Nuclear Submarines?," in *China's Future Nuclear Submarine Force* (Annapolis, MD: Naval Institute Press, 2007), 49.

⁷¹ Richard Sharpe, *Jane's Fighting Ships: 2000–2001*, 103rd ed. (Alexandria, VA: Jane's Information Group, 2000), 115.

⁷² O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, 12.

⁷³ Sam Bateman, "Perils of the Deep: The Dangers of Submarine Proliferation in the Seas of East Asia," *Asian Security* 7, no. 1 (February 28, 2011): 61–84, doi:10.1080/14799855.2011.548213.

makes a virtue out of its military isolation.”⁷⁴ The problem is that China’s isolated military is one cause for instability in the region. If the CCP would allow for more clarity and openness with its intentions and capabilities of its military, it could foster greater stability in this area of the world. Many theories have surfaced as to why China improved its naval forces. However, for what purpose is China planning to wield this power and will this rise bring about conflict in the region? However, if China continues to limit discussions of its military intentions with the outside world, it will be hard to get a firm answer.

To understand the PLAN, and for what purpose the CCP uses its naval force, several approaches are possible. One way to analyze its naval power is through its white paper released in 2011, which stated, “The fundamental purpose of modernizing the Chinese armed forces is to safeguard China’s sovereignty, security, territorial integrity and interests of national development.”⁷⁵ By applying its naval force to achieve its goals, it is possible to understand the reason for China’s modernization with the hope to prevent future conflict or war. The White Paper also explains what its goals or core interests of China are by stating, “China is firm in upholding its core interests which include the following: state sovereignty, national security, territorial integrity and national reunification, China’s political system established by the Constitution and overall social stability, and the basic safeguards for ensuring sustainable economic and social development.”⁷⁶ China also claims that its actions are defensive in nature.⁷⁷ The issue stems from the core interests of China being nationally centered, but its interests are being infringed upon from international factors, which cause its military to modernize to safeguard its national goals. Two international issues that a naval lens can be applied to are China’s sovereignty through national reunification and economic development.

⁷⁴ Sharpe, *Jane’s Fighting Ships: 2000–2001*, 83.

⁷⁵ “China’s Peaceful Development,” September 6, 2011, http://www.china.org.cn/government/whitepaper/2011-09/06/content_23362744.htm.

⁷⁶ Ibid.

⁷⁷ Ibid.

The CCP believes that there can only be one China. In white papers regarding Taiwan, China argues that islands once occupied by Japan and Taiwan, under the 1943 Cairo Declaration, are Chinese territory and Beijing is the legal government of these areas.⁷⁸ The sovereignty of China and national reunification of Taiwan could be considered more stable if the actions of the PLAN regarding cross-straits relations were not seen as hostile. From an outside perspective, the modernization of the PLAN looks as if China is preparing to prevent any access by other nations to the China Seas region. A 2014 report to U.S. Congress, states, “China’s growing anti-access/area denial capabilities increasingly will challenge the ability of the United States to deter regional conflicts, defend longtime regional allies and partners, and maintain open and secure access to the air and maritime commons in the Asia Pacific.”⁷⁹ Even though the United States and China have held a joint Strategic and Economic Dialogue since 2009, Taiwan is not addressed accordingly during this event.⁸⁰ This event is a step in the right direction; but the hard issues are not discussed at length, which needs to occur for greater stability.

In addition to China’s sovereignty, its economy plays another vital role in understanding the PLAN modernization. The CCP understands that its nation is growing larger every year and that it must provide for its people. The CCP must increase its wealth and power to accommodate this population increase. Resources are one aspect that allows a nation to grow, so the CCP must ensure that it has a steady inflow of raw materials, oil, and other necessities. To accomplish this inflow, the CCP had to alter its maritime strategy, according to Nan Li in his article, “The Evolution of China’s Naval Strategy and Capabilities: From “Near Coast” and “Near Seas” to “Far Seas.” He discusses how the PLAN’s naval strategy has shifted over the years, beginning with a “near-coast defense” in the 1980s to the “far-seas operations” of today. Li argues that the major driving force behind this shift was the PLAN commander, Liu Huaqing, who,

⁷⁸ “The Question and Reunification of China,” August 1993, <http://www.china.org.cn/e-white/taiwan/index.htm>.

⁷⁹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2014*, 328.

⁸⁰ Wendell Minnick, “Analysts: Taiwan Goals Drive China’s Spratly Grab,” *Defense News*, June 29, 2015, <http://www.defensenews.com/story/defense/policy-budget/warfare/2015/06/28/taiwan-china-reclamation-island-invasion-spratly-south-china-sea-pla/29260999/>.

served from 1982 until 1988. In Liu's memoirs, he references Alfred Mahan's *The Influence of Sea Power upon History*, who argued that navies are essential to the growth of a nation by establishing control of sea lines of communication.⁸¹ To best control sea lines, a nation must grow its naval force, and with it, its submarines.

This chapter analyzes the modernization of the PLAN submarine fleet since 2000 because, at that time, the PLAN signaled that changes were occurring in the submarine community. Beginning in 2002, the PLAN launched its Type 093 nuclear attack submarine, an upgrade to its older Han-class.⁸² Then in 2003, Navy Admiral Zhang Dingfa took over as leader of the PLAN, which was the first time a submariner held this position.⁸³ In 2004, Admiral Zhang was then awarded a seat on the Central Military Commission, "China's most important national security decision-making body."⁸⁴ Also in 2004, the PLAN launched its Type 094, an upgrade to its older Xia-class submarines.⁸⁵ With a submariner leading the PLAN, and new types of submarines emerging, the PLAN's modernization was underway. By comparing the changes in the submarine fleet from 2000 to today, this chapter provides a baseline of its recent modernization for comparison with the navies of India, Japan, and the United States in later chapters.

B. TYPES OF SUBMARINES

The PLAN submarine fleet is composed of three different types of submarines: conventional (diesel-electric patrol submarines [SSKs] and diesel-electric guided missile submarines [SSGs]), nuclear-attack (SSNs) and nuclear-powered ballistic missile submarine (SSBNs), and air-independent propulsion submarines.⁸⁶ This section analyzes each type. See Table 1 for a complete list of PLAN submarines.

⁸¹ Nan Li, "The Evolution of China's Naval Strategy and Capabilities: From 'Near Coast' and 'Near Seas' to 'Far Seas,'" *Asian Security* 5, no. 2 (2009): 145–55, doi:10.1080/14799850902886567.

⁸² McConaughy, "China's Undersea Deterrent: Will the U.S. Be Ready," 89.

⁸³ Shi Jiangtao in Beijing, "A Crucial Time for PLA Development, Says Hu," *South China Morning Post*, January 5, 2006.

⁸⁴ McConaughy, "China's Undersea Deterrent: Will the U.S. Be Ready," 93.

⁸⁵ *Ibid.*, 89.

⁸⁶ IHS Jane's, "IHS Jane's World Navies: China," April 15, 2015.

Table 1. PLAN Submarine Growth

	2000	2015
SSBN Type 092 Xia-class	1	1
SSBN Type 094 Jin-class	0	4*
SSB Golf-class	1	1
SSN Type 091 Han-class	5	3
SSN Type 093 Shang-class	0	6
SSK Type 039A/041 Yuan-class	0	12
SSG/SSK Type 039/039G Song-class	4	13
SSK Type 033 Romeo-class	40	0
SSK Type 035 Ming-class	19	19
SSK Project 877EKM/636 Kilo-class	6	12
SSA Type 032 Qing-class	0	1
TOTALS	77	72

Source: Richard Sharpe, *Jane's Fighting Ships: 2000–2001*, 103rd ed. (Alexandria, VA: Jane's Information Group, 2000), 115–120; Stephen Saunders, *IHS Jane's Fighting Ships 2013–2014*, 116th ed. (Alexandria, VA: Jane's Information Group, 2013), 127–34; IHS Jane's, "IHS Jane's World Navies: China," April 15, 2015.

*Sources do not indicate how many are currently capable of carry the JL-2 missiles.

1. Conventional Submarines

The PLAN has several types of conventional submarines: SS Type 035, Ming-class, SSG Kilo-class, SSG Type 039/039G, Song-class, and SSG Type 039A, Yuan-class. These submarines are all diesel-electric powered and have the ability to carry an assortment of weapons to include surface-to-surface missiles (SSMs), ASCMs, and wake-homing torpedoes. These submarines can rest on the bottom of the ocean floor and turn off their engines in an attempt to avoid ASW detection. In addition, the China coast is a

noisy environment flooded with diesel-electric freighters and trawlers, allowing the Song-class to disguise its acoustic signature.⁸⁷ Their mission is to disrupt SLOCs and attack battle fleets.⁸⁸

a. SS Type 035, Ming-class

This class was originally commissioned in 1971. In 2000, the PLAN had approximately 19, but today it only has 16. The Ming-class, a patrol submarine, primarily attacks with Yu-4 torpedoes, but these submarines can also lay mines. The range for a passive homing Yu-4 torpedo is 8.1 nm (nautical miles).⁸⁹ These submarines are older and lack the newer technologies, but China may use this submarine as a decoy or to bait an enemy submarine.⁹⁰

b. SSG Type 039/039G, Song-class

This class was originally commissioned in 1999. In 2000, the PLAN had four of them. In 2015, it has 13 in the fleet.⁹¹ The Song-class is replacing the Ming-class and this diesel-electric submarine has advantages over nuclear-powered submarines in shallow waters, specifically in the Taiwan Straits.⁹² The Song-class is armed with SSMs, and active and passive torpedoes. The SSM, C-801 that this submarine can carry has a range of 22 nm.⁹³

⁸⁷ Howarth, *China's Rising Sea Power: The PLA Navy's Submarine Challenge*, 93.

⁸⁸ U.S. Congress, *U.S.-China Economic and Security Review Commission*, 301.

⁸⁹ "Ming Class (Type 035)," February 13, 2015, https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1352625&Pubabbrev=JFS_.

⁹⁰ O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, 15.

⁹¹ Stephen Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 116th ed. (Alexandria, VA: Jane's Information Group, 2013), 131.

⁹² IHS Jane's, "IHS Jane's World Navies: China."

⁹³ "Song Class (Type 039/039G)," February 13, 2015, https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1352623&Pubabbrev=JFS_.

c. SSG Kilo-class (Project 877EKM/636)

This class was originally commissioned in 1994. In 2000, the PLAN had four boats operational. Since then, their number has increased to 12, all built at Russian shipyards.⁹⁴ The first two were known as Project 877 and all later variants are known as 636. The 636, as compared to the 877, has a longer submerged time and greater endurance because of an advanced engine design. The investment the PLAN has made in this model has given the PLAN an advantage in the South and East China Sea. Some sources claim that this model is one of the world's quietest diesel-electric submarines.⁹⁵ These submarines can be loaded with missiles, torpedoes, and mines.⁹⁶ Also, eight of these submarines have been fitted to carry an advanced ASCM, the SS-N-27.

d. SSG Type 039A/041 Yuan-Class

The Yuan class was originally commissioned in 2006. By 2015, China had 12 of these in operational status.⁹⁷ This new type of patrol submarine has benefitted from new quieting technologies. Some sources state this class is 039A, and others claim it is the 041. This thesis does not make the distinction between the two; however, two of the Yuan-class vessels also have been fitted with the Stirling-type air-independent propulsion (AIP) system.⁹⁸ For combat capabilities, this submarine has the ability to carry the C-801 SSM, and active and passive torpedoes.

2. Nuclear Submarines

The PLAN's nuclear submarines can be divided into two categories, SSN nuclear-attack and SSBN nuclear ballistic-missile submarines. Conventional submarines tend to be quieter and slower than nuclear-powered, which tend to be louder and faster. However, the capabilities that nuclear power affords a submarine are great. By harnessing

⁹⁴ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 132.

⁹⁵ Howarth, *China's Rising Sea Power: The PLA Navy's Submarine Challenge*, 16.

⁹⁶ "Kilo Class (Project 877EKM/636)," February 13, 2015, https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1352624&Pubabbrev=JFS_.

⁹⁷ IHS Jane's, "IHS Jane's World Navies: China."

⁹⁸ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 133.

the energy in nuclear reactors, these submarines can maintain faster speeds over longer periods, in an attempt to outrun torpedoes, quickly attack an enemy, or outrun ASW tactics.⁹⁹ In addition, a primary advantage of nuclear submarines is the long range that the platform provides. These submarines have the capability to remain at sea, or even remain submerged for months at a time.¹⁰⁰ The PLAN has invested time and energy building up its nuclear submarine fleet, which could greatly increase their undersea presence.

a. SSBN Type 094, Jin-class

This type was first launched in 2004, commissioned in 2007, and the PLAN now has four hulls.¹⁰¹ This class represents the PLAN's capacity to modernize. According to the Office of Naval Intelligence, the Jin-class is the PLAN's quietest nuclear submarine to date.¹⁰² The goal for this platform is to launch a JL-2 missile, and reports have indicated that China performed a successful launch in 2013.¹⁰³ The JL-2 is equipped with a single warhead with the ability to target India or Alaska from Chinese waters.¹⁰⁴ This class can hold 12 JL-2 missiles, which would give the PLAN a formidable platform akin to the U.S. *Ethan Allen* class subs commissioned in the 1950s.¹⁰⁵ The PLAN may be creating an advanced SSBN Type 095, which could be quieter than the Jin-class, but no reports have confirmed its production.

⁹⁹ William S. Murray, "An Overview of the PLAN Submarine Force." In *China's Future Nuclear Submarine Force*, ed. Andrew S. Erickson et al. (Annapolis, MD: Naval Institute Press, 2007), 64.

¹⁰⁰ Federation of American Scientists, *Naval Nuclear Propulsion: Assessing Benefits and Risks* (Washington, DC: Federation of American Scientists, 2015), https://fas.org/wp-content/uploads/2015/03/FAS_Naval_Nuclear_Propulsion_Assessing_Benefits_and_Risks2015.pdf.

¹⁰¹ Saunders, *IHS Jane's Fighting Ships: 2013–2014*.

¹⁰² Office of Naval Intelligence, *The People's Liberation Army Navy: A Modern Navy with Chinese Characteristics* (Suitland, MD: Office of Naval Intelligence, 2009), 22. <http://fas.org/irp/agency/oni/pla-navy.pdf>.

¹⁰³ Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2015," *Bulletin of the Atomic Scientists* 71, no. 4 (July 1, 2015): 77–84, doi:10.1177/0096340215591247.

¹⁰⁴ *Ibid.*, 81.

¹⁰⁵ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 128.

b. SSN Type 091, Han-class

The Han-class is a nuclear-powered submarine intended to hunt other submarines and other surface ships using torpedoes and non-nuclear missiles. This class was originally commissioned in 1984, and in 2000, numbered five; however, that number has been reduced to three. In 2003, the PLAN decommissioned hull no. 401, and in 2007, hull no. 402.¹⁰⁶ Due to improved designs and newer technologies, it appears this class will be replaced on a one-for-one basis with the improved Shang-class submarines.¹⁰⁷

c. SSN Type 093, Shang-class

This class is similar to the Russian Victor III design, first commissioned in the late 1960s, as China received help from Russian experts to complete this class. This type is a new class for the PLAN, which they started to commission in 2006. They now have six.¹⁰⁸ This class can be loaded with SSMs, active and passive torpedoes, and is designed for patrol the maritime periphery. In addition, it will most likely be used as an escort for the SSBNs and aircraft carrier task force.¹⁰⁹

3. Air Independent Propulsion Submarines

AIP technology can enhance non-nuclear submarines by allowing these quiet hulls to stay submerged longer—sometimes up to two full weeks—and can allow the submerged vessel to reach higher speeds if needed. Normally, if a diesel submarine performed an attack run, the submarine would have to use most of its energy during this phase, and after a weapons release, the submarine would be forced to surface to recharge its batteries. After surfacing, the submarine's position would be compromised. If a submarine were equipped with AIP technology, the submarine would not have to surface

¹⁰⁶ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 130.

¹⁰⁷ O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, 76.

¹⁰⁸ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 129.

¹⁰⁹ U.S. Congress, *U.S.-China Economic and Security Review Commission*, 301.

after an attack run because it could still operate its motors, allowing it to stay submerged.¹¹⁰

It has been reported that China has fitted two of its Yuan-class submarines with AIP technology based on a German design. In addition to the two Yuan-class, Russia and China signed an agreement for Russia to sell four Project 677E Lada-class submarines.¹¹¹ It has been speculated that Russia may no longer produce the Lada-class, and it may shift its resources to a more advanced Kalina-class submarine that will be fitted with AIP. Thus, if China does not receive the Lada-class, it may acquire more advanced, AIP equipped Kalina-class submarines.¹¹²

4. PLAN Submarine Growth

The PLAN submarine fleet has shrunk in numbers of hulls while increasing in their quality and performance, as reflected in Table 1. The biggest improvements are the acquisition of the Type 094 Jin-class and the decommissioning of older class submarines, which has paved the way to allow for better quality submarines.

C. OPERATIONS

The PLAN has upgraded a majority of its shrinking submarine force, but the amount of deployments and standards of training need to be analyzed to evaluate properly the threat it poses. For the crew of a submarine to become proficient, multiple deployments, intense training, and operations at sea will have to occur. Since 2000, the PLAN's submarines have ventured out farther than ever and more often, but the crews still lack experience. Federation of American Scientists reports that the PLAN just started to operate its SSNs on extended patrols and the SSBNs have yet to conduct a patrol.¹¹³ Inexperience can be costly, in 2003, and in 2005, its submarine community faced setbacks. In 2003, one of its Ming-class submarines experienced a mechanical

¹¹⁰ Murray, "An Overview of the PLAN Submarine Force," 67.

¹¹¹ IHS Jane's, "IHS Jane's World Navies: China."

¹¹² Ibid.

¹¹³ Hans M. Kristensen, "Is China Planning to Build More Missile Submarines?," *Federation of American Scientists*, accessed February 12, 2016, <https://fas.org/blogs/security/2015/04/china-subs/>.

malfunction underwater and all 70 members of its crew died. Then, in 2005, during a training mission, another Ming-class experienced a fire while the vessel was submerged causing it to stall out. No crewmembers were injured, but this type of malfunction does cause speculation as to how proficient the PLAN submarine community is at operating its equipment.¹¹⁴ It has also been reported that the submarine crews for the Kilo-class did not receive the amount of training that Russia recommended after China purchased some of its submarines. Russia suggested 18 months of training, while China reduced that time frame to 12 months, and then lowered it again to nine months.

However, like its equipment modernization, its personnel's training has also modernized to meet the demands of modern warfare. The PLAN has altered its training cycles to incorporate more realistic scenarios, such as "opposing force training." and "far seas" training.¹¹⁵ The improvements implemented have increased their proficiency and capabilities, but they are still not as proficient as the U.S. military. Figure 1 illustrates that the number of deployments have increased in recent years but for its force to match the competency of the U.S. or Japanese forces, the number and duration of deployments will have to increase. The number of patrols that the PLAN submarine conducts compared to the quantity of submarines owned is very low. Figure 1 does not differentiate between submarines and ships, but if submarines conducted half of the patrols in 2013, the data would suggest that 13 patrols were conducted from a fleet of 72 submarines. By comparison, the U.S. Navy conducted 31 nuclear deterrence patrols in 2008 with 14 SSBNs.¹¹⁶ The U.S.-China Economic Security Review Commission compiles this data and they report to Congress every year regarding national security implications between the two nations. Currently, the PLAN submarines are being used for antipiracy missions, maritime patrols, and maritime exercises.¹¹⁷

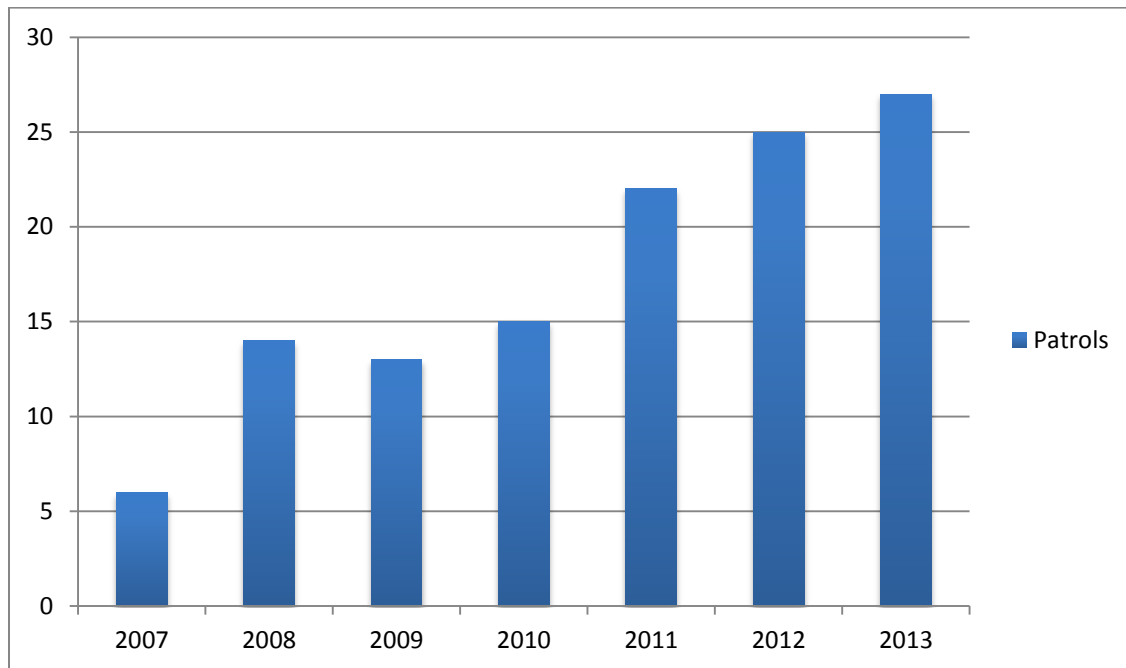
¹¹⁴ Agence France-Presse and Ray Cheung in Beijing, "Submarine Damaged in Exercise, Officials Admit," *South China Morning Post*, June 1, 2005.

¹¹⁵ Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, 24-5.

¹¹⁶ Hans M. Kristensen, "U.S. Strategic Submarine Patrols Continue at Near Cold War Tempo," Federation of American Scientists, accessed February 12, 2016, <http://fas.org/blogs/security/2009/03/ussbn/>.

¹¹⁷ Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*.

Figure 1. PLAN Surface and Submarine Combat Readiness Deployments, 2007–2013



Source: U.S.-China Economic and Security Review Commission, *2014 Report to Congress* (Washington, DC: U.S. Government Printing Office, 2014), 285.

In late 2013 and early 2014, the PLAN most likely used its submarines for the first time in anti-piracy missions. The PLAN deployed a SSN Shang-class from December 2013 until February 2104. Then again, in September and October, a SSK Song-class was deployed; both were in the Indian Ocean. Most notable was the first foreign port call of a PLAN submarine in its history when a Song-class visited Colombo, Sri Lanka.¹¹⁸ The participation of submarines in antipiracy missions helps the submarine crew with basic operations, as well as with working experience in the same water space as other vessels, increasing the skills of the crew.

D. SUBMARINE WEAPONS PAYLOAD

The PLAN has made substantial increases in the quality of weapons that its submarines can carry. These new weapons have caused concern for many different nations. The capacity for the weapons to inflict greater harm continues to increase and

¹¹⁸ U.S. Congress, *U.S.-China Economic and Security Review Commission*, 255.

many nations are watching carefully to assess the safety of their own maritime assets and home territories.

1. SLBM JL-2 Missiles

This missile is the PLAN's upgrade to its JL-1. The JL-2 is based on its land-based DF-31 intercontinental ballistic missile (ICBM), and IHS Jane's believes that the first launches of this missile occurred in 2005.¹¹⁹ The Office of Naval Intelligence also reports that in 2012, this missile had successfully completed its testing and is ready to enter the force.¹²⁰ Futures upgrades to the warhead may provide the ability to carry either a single nuclear warhead or multiple independently targetable reentry vehicles (MIRVs) that would carry a smaller yield.¹²¹ In addition to the warhead, the range will also increase, whereas the JL-1 had a maximum range of 2,200, the JL-2 could have a range up to 4,598 miles.¹²² However, successful targeting at this long range would prove to be difficult.

2. SS-N-27 Sizzler

This ACSM is currently carried on eight China's Kilo submarines and has an anti-surface capability out to 120 nm. They are Russian made and are some of the most capable weapons the PLAN operates.¹²³

3. Yu-5 Torpedo

This torpedo is an ASW weapon that initially is guided by wire until the final phase where it uses active/passive homing to reach its intended target. This weapon has a maximum range of 16.2 nm.¹²⁴

¹¹⁹ IHS Jane's, "IHS Jane's World Navies: China."

¹²⁰ Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*.

¹²¹ U.S. Congress, *U.S.-China Economic and Security Review Commission*, 319.

¹²² *Ibid.*, 320.

¹²³ *Ibid.*, 77.

¹²⁴ "Yu-5/ET-34/ET-36," August 17, 2015, https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1496053&Pubabbrev=JNW_.

E. CONCLUSIONS

The PLAN has been improving its undersea fleet since 2000, as this chapter has shown, and the PRC does not give any indication of slowing this process down. Whether the reason is to aid in China's sovereignty or to help sustain its economy, the submarine fleet looks threatening to other states. The challenge for China will be how and when to deploy its assets. It is also evident that the modernization of the PLAN is not complete. One of the most important steps, the PLAN's first nuclear deterrent patrol, which would complete the nuclear triad, has yet to be accomplished.¹²⁵ Through equipment modernization and effective training, this force is preparing for a larger role in the region. India, Japan, and the United States desire stability in the region. However, the PLAN has the capability to upset the balance of power in the Indian Ocean, Sea of Japan, and South China Sea.

¹²⁵ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2015* (Washington, DC: Office of the Secretary of Defense, 2015), 9.

III. INDIA'S VIEWS ON CHINESE SUBMARINE MODERNIZATION

India argues in its 2007 *Freedom to Use the Seas: India's Maritime Military Strategy* that in the future decades, its nation will be among the “foremost centres of power” and, to help achieve this feat, its military will play a critical role.¹²⁶ India envisions itself a leader among the world players, and its navy is currently taking steps to improve its presence not only in the region, but also across all the world's oceans. However, Chinese submarines are threatening to destabilize the Indian Ocean region, as both states compete for regional interests. To become a center of power, the navy has outlined several key interests in its Maritime Doctrine along with its goals in its Maritime Military Strategy to achieve greater power. India is carefully monitoring the role of China and the potential for its submarines to disrupt India's interests, which could hinder India's vision of becoming a center of power. This chapter first discusses the Sino-Indian history and rivalry. It then describes how the PLAN's modernization has caused the Indian Navy (IN) to procure more ASW assets. Then, it analyzes how the PLAN's use of submarines could potentially threaten India's ability to execute its maritime doctrine and could prevent India from achieving its national goals. This chapter then evaluates India's response to the potential threat from the PLAN and its submarine force.

A. SINO-INDIAN DISPUTES

To understand better the present day tensions that exist in the Sino-Indian relationship, its history should be examined. Indian and China will have a difficult time agreeing to any type of policy involving cooperation because of their unresolved historical issues. This section first discusses the Sino-Indian border conflict and then analyzes China's relationship with India's enemy Pakistan.

¹²⁶ Sureesh Mehta, *Freedom to Use the Seas: India's Maritime Military Strategy* (New Delhi: Integrated Headquarters Ministry of Defence (Navy), 2007), iii.

1. Border Dispute

India and China are connected through land borders, which are more than 2,000 miles long. China also continues to occupy disputed territory in the Aksai Chin area near Jammu and Kashmir, while India occupies disputed territory in the Eastern sector, Arunachal Pradesh, near Burma. These two nations went to war regarding border disputes. They never resolved the dispute, and until an agreement is reached, tensions will exist in their relationship.

One of the earliest wars at the border occurred in 1959 when India claimed that China invaded territory in the Ladakh region and began to occupy the area.¹²⁷ This act was one of the first steps of Chinese aggression. Then again, in 1962, another war occurred when China invaded another area known as the North East Frontier Agency (NEFA) of India because of a border disagreement, as each side claims the territory.¹²⁸ Analysts argue that the unresolved border dispute is destabilizing to the region.¹²⁹ India has not forgotten the occupation that China started in 1959, and because of the close proximity to China, India feels uneasy. Currently, a major concern of India is that Chinese land-based missiles can target every major Indian city; meanwhile, the PLAN is increasing this capability with new SLBMs. The PLAN has also had port visits in Sri Lanka, and has been cooperating with Pakistan. China will soon have the ability to surround India, and because, of a lack of transparency, along with an unresolved border dispute, India does not trust China.

2. China's Relationship with Pakistan

Along with an unresolved border dispute that creates division in the Sino-Indian relationship, China's relationship with Pakistan has perpetuated tensions between the two states. China has been increasing its military ties to Pakistan through missiles, technology, and submarines, while Pakistan remains an Indian enemy. Pakistan's largest

¹²⁷ Satyanarayan Sinha, *China Strikes* (London: Blandford Press, 1964), 73.

¹²⁸ Ibid., 76–77.

¹²⁹ Sujit Dutta, "Revisiting China's Territorial Claims on Arunachal," *Strategic Analysis* 32, no. 4 (July 2008): 550.

arms supplier is China, which has been selling it a variety of military equipment.¹³⁰ During the 1990s, China provided Pakistan with weapons, including missile parts, as well as nuclear technology. Pakistan received M-11 missiles and launchers, which can be armed with nuclear warheads.¹³¹ It also received M-9 missiles and Dong Feng-21 ballistic missiles to help counter the perceived threat from India. In addition, the Chinese built Pakistan's first nuclear plant and have signed on to build additional nuclear plants.¹³²

While China has bolstered Pakistan's missile and nuclear technology, it also may strengthen Pakistan's undersea development. According to the *Naval War College Review*, Pakistan's defense ministry has requested to purchase six diesel-electric submarines from China. The class of submarine is unknown, but Pakistan has requested the submarines to be AIP equipped.¹³³ This relationship causes Asian security expert Iskander Rehman to write in *Asian Security*, "The PRC's continued military and economic assistance to Pakistan, India's main rival in South Asia, remains a major irritant in Sino-Indian relations and is perhaps the one single issue which aggravates India the most in its dealings with China."¹³⁴ It seems that China sees tremendous value in this relationship and will go to great lengths to protect it. Former Chinese President Hu Jintao describes this relationship, "We can give up gold but we cannot give up our friendship with Pakistan...Pakistan and China's relationship is higher than the Himalayas, deeper than the Indian Ocean and sweeter than honey."¹³⁵

India's *Annual Report 1966–67* published by its Ministry of External Affairs stated, "Developments in 1966 confirmed...not only the Chinese Government's intense and all-around hostility against India but also their persistence...in playing Pakistan

¹³⁰ Mohan Malik, *China and India: Great Power Rivals* (Boulder, CO: First Forum Press, 2011), 181.

¹³¹ Paul J. Smith, "The China-Pakistan-United States Strategic Triangle: From Cold War to the 'War on Terrorism,'" *Asian Affairs: An American Review* 38, no. 4 (December 2011): 207.

¹³² Iskander Rehman, "Drowning Stability: The Perils of Naval Nuclearization and Brinkmanship in the Indian Ocean," *Naval War College Review* 65, no. 4 (Autumn 2012): 73.

¹³³ *Ibid.*, 75.

¹³⁴ Iskander Rehman, "Keeping the Dragon at Bay: India's Counter-Containment of China in Asia," *Asian Security* 5, no. 2 (May 2009): 117, doi:10.1080/14799850902885114.

¹³⁵ Malik, *China and India: Great Power Rivals*, 165.

against India and keeping the two countries of the subcontinent in a state of conflict.”¹³⁶ India’s perception is that while Pakistan has always been its enemy, a regional re-balancing had occurred through China’s increased support for Pakistan, which causes India to feel alone in the region.

B. INDIA’S RESPONSE TO CHINESE SUBMARINES

China—possessing four times as many submarines as India—has not caused India to match the quantity, which has created an asymmetrical arms race. Some of China’s fleet is not relevant; the Ming class would struggle to sustain operational deployment in the Indian Ocean. Rather, India seems to be countering China’s most lethal threat, its Jin-Class SSBN. India has increased its ASW capabilities since 2000 when it recognized that the PLAN was modernizing its submarine assets. Harsh V. Pant and Yogesh Joshi argue in the *Naval War College Review* that, “China’s rapid naval modernization and its forays into the Indian Ocean have forced New Delhi to rethink the role of its navy in maintaining the maritime balance of power.”¹³⁷ As the PLAN grows and modernizes just like the rest of China, India’s military cannot sit idly, it must respond as Chinese assets slowly operate closer to India. Admiral D. K. Joshi, a former Indian Chief of the Naval Staff, argues that the advancement of the Chinese maritime forces “is actually a major, major concern for us, which we continuously evaluate and work out our options and strategies for.”¹³⁸ Pant also states in 2013, that India is likely to spend around \$112 billion on acquisitions, from 2010 to 2016, which may be one of the largest procurement cycles in the world during this period.¹³⁹ However, it can be seen that India is modernizing its fleet in response to the PLAN’s SSKs or SSNs, but the Indian government recently approved a budget that allows for the acquisition of nuclear attack

¹³⁶ Ministry of External Affairs, *Annual Report 1966–1967* (New Delhi, Government of India, 1966), 15.

¹³⁷ Harsh V. Pant and Yogesh Joshi, “The American ‘Pivot’ and the Indian Navy: It’s Hedging All the Way,” *Naval War College Review* 68, no. 1 (Winter 2015): 53.

¹³⁸ “Jane’s Sentinel Security Assessment-South Asia,” accessed March 17, 2015, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1304837&PubAbbr=SAS>.

¹³⁹ Harsh V. Pant, “Rising China in India’s Vicinity: A Rivalry Takes Shape in Asia,” *Cambridge Review of International Affairs* (March 11, 2013): 4, doi:10.1080/09557571.2012.734781.

submarines.¹⁴⁰ This acquisition can be perceived as an attempt to counter the PLAN's SSBNS. India is not going to allow China to sail into the Indian Ocean uncontested. This section discusses India's response through the acquisition of anti-submarine ships, aircraft, and submarines.

1. Hard Hedging

India's 19th Chief of the Naval Staff argues in 2009 that China has a military force that must be addressed. He states:

Our strategy to deal with China must include reducing the military gap and countering the growing Chinese footprint in the Indian Ocean Region. The traditional or "attritionist" approach or matching "Division for Division" must give way to harnessing modern technology for developing high situational awareness and creating a reliable stand-off deterrent.¹⁴¹

In February 2015, India's Cabinet Committee on Security approved and funded a plan to improve its military to counter China's growing military power. The new \$8 billion plan hopes to lessen the gap between the two militaries by calling for the funding of new anti-submarine ships and submarines.¹⁴² Prior to the new funding, India had already begun to transform its navy into a modern fleet, adding multiple ASW ships with the ability to hunt submarines. India, in 2012, commissioned its first SSN, the INS *Chakra*. The Indian Navy also possesses nine SSKs, which allows the IN to counter the Chinese threat. The SSK type submarine is used to hunt and attack other submarines, which is one of the best weapons against nuclear-powered submarines. Tsipis Kosta writes in *Tactical and Strategic Antisubmarine Warfare* that "by far the most effective weapon against a quiet deep-diving nuclear submarine is another submarine, since it can be equally if not more quiet, can occupy the same portion of the oceans as its quarry, and is large enough to accommodate extensive sonar arrays, their power sources and

¹⁴⁰ "Why India Lags China in Submarine Race," accessed February 18, 2016, <http://economictimes.indiatimes.com/news/defence/why-india-lags-china-in-submarine-race/articleshow/48145597.cms>.

¹⁴¹ Sureesh Mehta, "India's National Security Challenges," *Outlook India*, August 12, 2009, www.outlookindia.com/article/indias-national-security-challenges/261738.

¹⁴² Sanjeev Miglani, "India Clears \$8 Billion Warships Project to Counter Chinese Navy," *Reuters India*, February 18, 2015, <http://in.reuters.com/article/2015/02/18/india-defence-navy-idINKBN0LM1A920150218>.

elaborate processors and antisubmarine weapons.”¹⁴³ The IN fully understands that to prevent or deter a Chinese SSBN in the Indian Ocean, it must possess the best weapon to counter the threat, which is why it focused on ASW capabilities compared to its one SSBN.

a. Modernization of Anti-Submarine Ships

The IN realized that one way to counter the PLAN’s submarine modernization is to have a formidable ASW capability, and ASW surface ships provide a means to accomplish this capability. This class of ship is important for the IN because the cost to purchase and operate is much less than a nuclear submarine. In addition, the IN personnel do not have experience conducting operations with a SSBN, while they already have the expertise to operate surface ships. In addition, the IN wanted to have its own unique ASW ships, so they started to build indigenous ships with Indian research and development. India’s first ASW specialist is the Corvette Class, INS *Kamorta*, which was first launched in 2010, and later commissioned in 2014.¹⁴⁴ This ship was designed to hunt submarines, due to the presence of the PLAN in the Indian Ocean Region (IOR). The main weapons on these vessels to hunt submarines are the RBU-6000 anti-submarine rocket launchers and the DTA-53 533 mm twin torpedo launchers along with an advanced hull-mounted sonar array to track submarines. The RBU-6000 shoots shaped depth charges that can be guided or unguided, but because the charge is shaped, it can puncture the hull of a submarine. The IN has ordered 12 additional units and plans to have four more operational by 2017.¹⁴⁵ India believes that this type of ship will play an integral part in its fleet.

The INS *Kolkata* is another ASW ship that is mostly indigenous. It was launched in 2006 and commissioned in 2014. This class, like the ASW corvettes, carries the RBU-

¹⁴³ Tsipis Kosta, *Tactical and Strategic Antisubmarine Warfare* (Cambridge, MA: MIT Press, 1974), 27.

¹⁴⁴ “INS *Kamorta*: All You Need to Know about India’s Indigenous Warship,” accessed September 29, 2015, <http://www.dnaindia.com/india/report-ins-kamorta-all-you-need-to-know-about-india-s-indigenous-warship-2013021>.

¹⁴⁵ Nitin Gokhale, “India Readies for China Fight,” *The Diplomat*, June 6, 2010, <http://thediplomat.com/2010/07/india-readies-for-china-fight/2/>.

6000 anti-submarine rocket, twin torpedo launchers, and an advanced hull-mounted sonar array. However, this class also has an active towed sonar array and is capable of embarking two helicopters to aid in the hunt for submarines.¹⁴⁶ The towed sonar array is active, which allows for a greater search area. The embarkation of helicopters also allows for a greater search area through cooperative efforts; a helicopter can relay submarine data back to the ship, which enhances the undersea warfare picture.

b. Anti-submarine Aircraft

ASW ships are part of the formula to hunt submarines, but aircraft are needed as well to aid in the search of submarines, and India pushed hard to acquire new ASW aircraft for its fleet. When India learned the United States had a new ASW aircraft from Boeing, India desired to have its own version of this aircraft. India has a need to monitor submarine activity in the Indian Ocean and improved aircraft is one way to accomplish that need.

In 2013, India received the first of three in a shipment of eight of Boeing's newest long-range maritime reconnaissance (LRMR) ASW aircraft, the P-8I.¹⁴⁷ After the first eight are received, India plans to add 11 more by 2020.¹⁴⁸ The additional aircraft will increase India's maritime surveillance in the Indian Ocean and in the Bay of Bengal for the long term. This aircraft uses some of the newest ASW equipment to include sensors and weapons that will allow for improved searches for submarines. Aircraft have the ability to search large swaths of the ocean and can relay that information back to a ship. In addition, aircraft can move to a search sector faster than ships, greatly enhancing the search.

¹⁴⁶ "IHS Jane's World Navies: India," July 13, 2015, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322696&Pubabbrev=JWNA>.

¹⁴⁷ Ministry of Defence, *Annual Report, 2013–2014*, 38.

¹⁴⁸ David Scott, "India's Aspirations and Strategy for the Indian Ocean," *The Journal of Strategic Studies* 36, no. 4 (2013): 499, doi:10.1080/01402390.2012.728134.

c. Submarines

Ships and aircraft are essential to hunt submarines, but the IN wants a full ASW complement and to possess a strong undersea nuclear force. In 2012, the IN took a huge step forward when it began to operate its first nuclear-powered submarine, through a lease with Russia. This lease resulted in India being only the sixth nation to operate a nuclear-powered submarine, and placed its navy on a higher echelon as compared to other navies.¹⁴⁹

The IN, if it wants to deter China, must react. Swaran Singh states in the *Journal of the Indian Ocean Region* that the IN has been “pumping up its muscles” in response to China’s naval modernization, which has often been seen as its primary stimulus for the IN.¹⁵⁰ In 2000, India had a total of 20 submarines, 18 of which were operational, in three different classes, and all were diesel-electric powered.¹⁵¹ In 2015, India has 15 submarines, but it has added two different classes since 2000, SSBNs and an SSN, as shown in Table 2. These additions show that India wants to have an undersea capability that can rival powerful nations.

¹⁴⁹ Pant, “Rising China in India’s Vicinity: A Rivalry Takes Shape in Asia,” 4–7.

¹⁵⁰ Swaran Singh, “China’s Forays into the Indian Ocean: Strategic Implications for India,” *Journal of the Indian Ocean Region* 7, no. 2 (December 2011): 244, doi:10.1080/19480881.2011.637427.

¹⁵¹ Sharpe, *Jane’s Fighting Ships: 2000–2001*, 292.

Table 2. Indian Submarine Growth

	2000	2015	2020–2025
SSK Type 1500 Shishumar-class	6	4	4
SSK Type 877EM/636 Kilo/Sindhughosh-class	10	9	9
SS Type 641 Foxtrot-class	4	0	0
SSBN Arihant-class	0	1	1
SSN Project 971 Akula (Schuka-B) -class	0	1	1
SSN Project	0	0	6
SSK Project 75, Scorpene	0	0	6
SSK Project 75I, equipped with AIP and land attack capability	0	0	6
TOTALS	20	15	33

Source: [This table combines information regarding commissioned submarines both in active and reserve status.] Richard Sharpe, *Jane's Fighting Ships: 2000–2001*, 103rd ed. (Alexandria, VA: Jane's Information Group, 2000), 291–93; Stephen Saunders, *IHS Jane's Fighting Ships 2013–2014*, 116th ed. (Alexandria, VA: Jane's Information Group, 2013), 322–25; “World Navies: India,” July 13, 2015, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1322696&Pubabbrev=JWNA>; Atul Chandra, “Indian Navy Procurement Plan,” *Force: National Security and Aerospace Newsmagazine*, accessed October 30, 2015, http://www.forceindia.net/newsyoucanuse_indian_navy_procurement_plan.aspx; Rajat Pandit, “Gov't Approves Construction of 7 Stealth Frigates, 6 Nuclear-Powered Submarines,” *The Times of India*, February 18, 2015, <http://timesofindia.indiatimes.com/india/Govt-approves-construction-of-7-stealth-frigates-6-nuclear-powered-submarines/articleshow/46281364.cms>.

The INS *Arihant*, India's first indigenous nuclear submarine, is a source of pride for India. This submarine puts India in the same category as the United States, Russia, China, the United Kingdom, and France as the only nations to build nuclear-powered submarines. India had Russia's help with the design of this submarine, which was based on the Akula-class submarine.¹⁵² The Russian Akula-class submarines are understood to

¹⁵² Jyoti Malhotra, “How India's Pride INS Arihant Was Built,” *Business Standard India*, August 12, 2013, http://www.business-standard.com/article/specials/how-india-s-pride-ins-arihant-was-built-113081100745_1.html.

be Russia's fastest, quietest, and modern submarines.¹⁵³ While the Akula-class does not carry SLBMs, the INS *Arihant* will likely carry up to 12 SLBMs for the IN.¹⁵⁴ However, one SSBN does not constitute a complete strategic deterrent, so it will have to produce more in the future, which is a step toward increasing a maritime presence.

The IN added another submarine that was originally Russian built, now named the INS *Chakra*. A nuclear powered attack boat, INS *Chakra* is part of the Akula (Schuka-B)-class submarines that is part of a 10-year lease with Russia. This submarine was commissioned in 2012, and its use will help the IN crews to understand better how to operate nuclear-powered submarines and will also bolster its presence in the Indian Ocean.¹⁵⁵

d. Exercises

Another form of hard hedging is evident through Exercise Malabar. This event occurs in the Indo-Pacific region, and in 2015, the participants were India, the United States, and Japan. Submarines from both India and United States participate in this event to create a strong maritime relationship in efforts to preserve the balance of power in the region.¹⁵⁶

2. Soft Hedging

While India has responded to China with many intense actions, it has performed some relaxed responses that create a balanced approach. These actions have included several exercises and symposiums. The first is Exercise Hand-in-Hand, a joint exercise between China and India, which creates a platform for the two nations to discuss military issues. In 2014, the two nations participated in the fourth iteration of this exercise and mainly focused on army tactics to fight counter insurgency and counter terrorism. Both

¹⁵³ "Russia Submarine Capabilities," accessed February 12, 2016, <http://www.nti.org/analysis/articles/russia-submarine-capabilities/>.

¹⁵⁴ "India Submarine Capabilities," accessed February 12, 2016, <http://www.nti.org/analysis/articles/india-submarine-capabilities/>.

¹⁵⁵ "World Navies: India."

¹⁵⁶ Abhijit Singh, "Malabar 2015: Strategic Power Play in the Indian Ocean," *The Diplomat*, October 28, 2015, <http://thediplomat.com/2015/10/malabar-2015-strategic-power-play-in-the-indian-ocean/>.

nations agree that this exercise encourages a positive and friendly relationship between the two armies.¹⁵⁷

The second exercise that has helped to balance India's approach is U.S.-led Rim of the Pacific Exercise (RIMPAC). India participated for the first time in the RIMPAC exercise in 2014. Prior to this event, the navy participated as an observer in 2012. The growing influence of China in the region pushed the IN to participate in this exercise.¹⁵⁸ However, China also participated for the first time in this exercise, but neither navy sent a submarine to participate.¹⁵⁹ RIMPAC exists to allow nations to cooperate on the high seas and serves as the world's largest international maritime exercise.¹⁶⁰ Even though neither state participated in submarine exercises, this event allowed the two navies to interact, with a potential to engage in positive discussion. The IN gains useful naval insight in the logistics of operating with many nations at sea during this event.

India has also worked with China in several symposiums and the first is the Association of Southeast Asian Nations (ASEAN). This event has been meeting since 1967, but it was not until 1997 that China, Japan, and South Korea were invited, which created ASEAN +3—and has been held 15 times since 2000.¹⁶¹ ASEAN promotes economic growth and social progress, but more importantly, all members have adopted the Treaty of Amity and Cooperation (TAC) that binds member states, and not observers, from using force or the threat of force against each other.¹⁶² This event shows China that India has a willingness to cooperate and wants the relationship to remain peaceful. In a

¹⁵⁷ "Hand-in-Hand: India-China Military Exercise Ends on Friendly Note," November 26, 2014, <http://timesofindia.indiatimes.com/city/pune/Hand-in-Hand-India-China-military-exercise-ends-on-friendly-note/articleshow/45278653.cms>.

¹⁵⁸ Gupta Shishir, "India to Play Sea War Games with 22 Nations," *Hindustan Times*, September 9, 2013, <http://www.hindustantimes.com/newdelhi/india-to-play-sea-war-games-with-22-nations/article1-1119373.aspx>.

¹⁵⁹ South China Morning Post, "Most Welcome PLA Joining Rimpac Exercise with Region's Other Navies: Joint Naval Event Seen by Most as Opportunity to Calm Rivalries and Boost Ties with the US—but Others Urge Caution," July 27, 2014, sec. News.

¹⁶⁰ "RIMPAC 2014," accessed August 31, 2015, <http://www.cpf.navy.mil/rimpac/2014/>.

¹⁶¹ "ASEAN +3," accessed August 12, 2015, <http://www.asean.org/asean/external-relations/asean-3>.

¹⁶² Carlyle A. Thayer, "The Rise of China and India: Challenging or Reinforcing Southeast Asia's Autonomy?," in *Asia Responds to Its Rising Powers: China and India, Strategic Asia 2011–12* (Washington, DC: The National Bureau of Asian Research, 2011), 315–16.

larger context, the stability of undersea domain remains hostage to diplomatic efforts.¹⁶³ If competition between states is hostile, the undersea environment will be, as well, which can create instability.

The second event is the East Asian Summit (EAS), which is held directly after ASEAN and has occurred since 2005. It is typically held in the fall and the ninth EAS was held last November in Myanmar. This summit is important because it includes both India and China in discussions regarding maritime security/cooperation and disarmament/non-proliferation.¹⁶⁴ This event again reiterates India's desire to have a peaceful relationship with China.

C. INDIA'S MARITIME INTERESTS

India sees its navy as the primary stakeholder to protect its maritime interests. The IN uses two documents to guide its naval force, the first is the *Indian Maritime Doctrine*, which was released in 2009. This doctrine is used to guide the IN to achieve India's national interests and acts as a point of reference. The second document, *Freedom to Use the Seas: India's Maritime Military Strategy*, is used as the plan to achieve the goals set forth in its doctrine.¹⁶⁵ India intends to use its navy as a means to safeguard its interests. Two naval interests listed in the Indian Maritime Doctrine in direct conflict with Chinese military modernization are economic security and natural resources, including oil.¹⁶⁶ For India to protect these interests, India's Navy must have a maritime strategy that allows for a safe and secure environment. Indian Naval Commander Sibapada Rath argues that China has signaled the political will to deploy its forces far from its national shores, which demonstrates that it intends to transform its naval force from a coastal defender to a power projector.¹⁶⁷ Chinese submarines will be a force that can directly infringe on India's ability to protect its own interests.

¹⁶³ Singh, "Malabar 2015: Strategic Power Play in the Indian Ocean."

¹⁶⁴ Singh, "Malabar 2015: Strategic Power Play in the Indian Ocean."

¹⁶⁵ Mehta, *Freedom to Use the Seas: India's Maritime Military Strategy*, 6.

¹⁶⁶ Integrated Headquarters, *Indian Maritime Doctrine* (New Delhi: Ministry of Defence (Navy), 2009), 63–72.

¹⁶⁷ Rath, "Maritime Strategy of India and China: Influence of Alfred Thayer Mahan."

1. Economic Security

India's Navy plays an important role in the protection of its economic security and is in conflict with China's goal for economic security because China may pose a threat to India's freedom of navigation. India is one of the most populous nations in the world with over 1.29 billion people.¹⁶⁸ After India opened its economy, it achieved substantial growth, but the need for more resources to maintain economic growth also increased.

a. Navy's Security Role

Supremacy over the IOR has become not only an interest for India, but also a need. Indian Navy Admiral Sureesh Mehta argues regarding the use of the navy, in *Freedom to Use the Seas: India's Maritime Military Strategy* that "Our primary national interest therefore is to ensure a secure and stable environment, which will enable continued economic development."¹⁶⁹ The IN understands that the ocean is the primary way for its state to maintain growth, because without freedom of the seas, its population could suffer. Sureesh further argues that the navy also has another role to play by the way of prevention, "The Indian Navy is the primary maritime means by which the state ensures the use of the sea for its own purposes, while at the same time ensuring that others do not use it in a manner prejudicial to its interests."¹⁷⁰ The IN perceives that other states may infringe on the IOR, and it must be able to counter the challenges.

Both India and China need to provide for their growing population through trade security. Both nations want to have freedom to navigate the world's oceans and China's recent maritime activity, such as when its Song-class submarines made a port call in Sri Lanka, infringes on the IOR.¹⁷¹ This body of water, India claims, is of "supreme national security interest of survival."¹⁷² India and China may find themselves in a future conflict

¹⁶⁸ "Data: India," accessed September 1, 2015, <http://data.worldbank.org/country/india>.

¹⁶⁹ Mehta, *Freedom to Use the Seas: India's Maritime Military Strategy*, iii.

¹⁷⁰ Ibid., iv.

¹⁷¹ U.S. Congress, *U.S.-China Economic and Security Review Commission*, 255.

¹⁷² Gurpreet S. Khurana, "China-India Maritime Rivalry," *Indian Defence Review* 23, no. 4 (December 2009): 2, <http://www.indiandefencereview.com/2009/04/china-india-maritime-rivalry.html>.

because of their overlapping interests. Indian Naval Commander Gurpreet S. Khurana argues in the *Indian Defence Review* that China could find itself in a strategically vulnerable situation in the IOR in the case of a Sino-Indian conflict and China could remedy the situation by increasing its naval presence in the IOR.¹⁷³ However, if China had an increased naval presence in the region, India could feel its security threatened, and would have to respond to counter the threat. Former Indian Chief of Southern Naval Command retired Vice Admiral K. N. Sushil argues the PLAN has a formidable submarine capability and the IN has “strategic capability yet to deter China.”¹⁷⁴

b. Strategic Location

Trade across the oceans contributes to the economic growth of nations, an important element needed to maintain the growth of a nation, which was discussed in the previous section. The IOR has important trade value because of its size and location. The IOR contains almost 20 percent of the earth’s oceans and is the third largest oceanic zone in the world. In terms of trade, 80 percent of the world’s oil and natural gas transits this area.¹⁷⁵ However, the Indian Ocean contains strategic choke points, and access in and out of the region could become disrupted, which would affect trade, if a situation occurred in one of the choke points.

Choke points, because of their limited size, are crowded as more ships attempt to transit, which causes the vessels to be vulnerable. The United States Energy Information Administration identifies that four out of seven of the “world’s oil transit chokepoints” are found in the IOR.¹⁷⁶ Tensions may arise between China and India regarding the protection of shipping through these vital sea lanes. India has recognized the strategy of crippling a nation’s economy through sea denial, which could be accomplished in the

¹⁷³ Ibid.

¹⁷⁴ Sandeep Unnithan, “Exclusive: Indian Navy Headless as Chinese Nuclear Sub Prowls Indian Ocean,” *India Today*, March 21, 2014, <http://indiatoday.intoday.in/story/indian-navy-chinese-nuclear-sub-indian-ocean/1/350498.html>.

¹⁷⁵ Jagannath P. Panda, “China’s Tryst with the IORA: Factoring India and the Indian Ocean,” *Strategic Analysis* 38, no. 5 (2014): 671, <http://dx.doi.org/10.1080/09700161.2014.941215>.

¹⁷⁶ “Maritime Chokepoints Critical to Petroleum Markets,” March 2, 2011, <http://www.eia.gov/todayinenergy/detail.cfm?id=330>.

choke points. India argues in its *Maritime Military Strategy*, “War on an enemy’s economy by denying the use of the seas during hostilities has been an age-old strategy.”¹⁷⁷

It is uncertain how far China will assert itself in the IOR to ensure that its sea lanes remain unblocked. At the same time, it is uncertain how far India will go to establish dominance in the IOR. A prominent Indian scholar, K. M. Pannikar, wrote in 1945 that

while to other countries the Indian Ocean is only one of the important oceanic areas, to India it is a vital sea. Her lifelines are concentrated in that area, her freedom is dependent on the freedom of that water surface. No industrial development, no commercial growth, no stable political structure is possible for her unless her shores are protected.¹⁷⁸

The Indian Ocean to India also has symbolic value; it gives the nation a sense of pride for it is the only ocean in the world to be named after a nation. It seems that India would go to great lengths to ensure that its navy is never impeded in its operations in its “ocean.” India has a sense of responsibility to this ocean to ensure that all can transit safe. Iskander Rehman discusses this difficulty in *Asian Security*:

The heightened Sino-Indian rivalry in the Indian Ocean provides a perfect example of how one country’s uncertainty in its trade expectations can become a major motivation behind regional military expansionism, which then can give birth to an arms race, increasing the chances of conflict.¹⁷⁹

Both China and India have to provide for their nations and oceanic trade is a way to do so. India finds some of its legitimacy in the Indian Ocean itself, and as these nations continue to grow, they could find themselves at odds over oceanic trade.

2. Natural Resources

The third naval interest of the IN in conflict with China regards natural resources, as both states vie for the rights to acquire the resources in the Indian Ocean. The Indian

¹⁷⁷ Mehta, *Freedom to Use the Seas: India’s Maritime Military Strategy*, 43.

¹⁷⁸ K. M. Pannikar, *India and the Indian Ocean* (London: Allen and Unwin, 1945), 84.

¹⁷⁹ Rehman, “Keeping the Dragon at Bay: India’s Counter-Containment of China in Asia,” 138.

Ocean is an area rich in resources and a major source of global energy supplies.¹⁸⁰ The IOR has a tremendous amount of strategic raw materials; its littoral states contain more than 66 percent of the world's oil reserves and 35 percent of the world's known natural gas reserves.¹⁸¹ China and India have both increased their consumption of oil and natural gas and both need to maintain a constant supply. The competition to maintain their consumption could lead to conflict. Niclas D. Weimar states in *Global Change, Peace & Security*, "These resources are the crucial basis for the expansion and modernization of China's military capabilities, perceived as essential security instruments amidst growing regional tensions."¹⁸² China is competing directly with India for resources in the Indian Ocean.

A Chinese oil company, PetroChina, outbid India and signed a deal in 2006 with Burma for the access rights to 6.5 trillion cubic feet of natural gas off the coast of Burma.¹⁸³ This landmark deal set off the project for two pipelines to be constructed by the Chinese. The pipelines will begin in a Burmese port where tankers will offload the oil and natural gas; the pipelines will then travel through Burma and end in China's Province Yunan. The pipelines will have the ability to transport 440,000 barrels of oil a day and 12 million cubic meters of natural gas a year to China. The oil originates from the Middle East and Africa, while the natural gas emanates from new developments off the coast of Burma.¹⁸⁴ These pipelines will allow Chinese tankers to bypass the Straits of Malacca, saving time and money. As China has a greater presence in the region because of the natural resources, will China prevent India from accessing these resources or will India attempt to challenge China for them?

¹⁸⁰ Malik, *China and India: Great Power Rivals*, 326.

¹⁸¹ Niclas D. Weimar, "Sino-Indian Power Preponderance in Maritime Asia: A (Re-)Source of Conflict in the Indian Ocean and South China Sea," *Global Change, Peace & Security* 25, no. 1 (2013): 12, <http://dx.doi.org/10.1080/14781158.2013.761192>.

¹⁸² Weimar, "Sino-Indian Power Preponderance in Maritime Asia: A (Re-)Source of Conflict in the Indian Ocean and South China Sea," 9.

¹⁸³ *Ibid.*, 213.

¹⁸⁴ Jacob Gronholt-Pedersen, "Myanmar Pipelines to Benefit China," *Wall Street Journal*, May 12, 2013, <http://www.wsj.com/articles/SB10001424127887324326504578466951558644848>.

D. CONCLUSION

India has increased its own forces to counter a rising Chinese submarine force. India, like China, wants to exercise sovereignty over all claimed territories, and India knows that in the last decade, China has been able to flex its muscle in the maritime domain since the PLAN has the capacity to threaten India's sovereignty. Retired Vice Admiral K. N. Sushil also worries that China's submarines have the ability to threaten India's assured second-strike capability, which "tips the deterrence balance."¹⁸⁵ Even though China and India have participated peacefully in military exercises and symposiums, naval conflicts of interest arise through natural resource disputes and fear of alliances with the other's enemies. The CCP will continue to do what is necessary to allow its nation to grow to provide for its people, which is more important to the CCP than a cooperative relationship with India.

India's response, even though it demonstrates some more cooperative elements, seems to favor hard hedging over soft. Through increased spending, including a nuclear-powered submarine, the IN has shown that it desires to possess a fleet with the ability to counter a modernizing PLAN fleet. Harsh V. Pant argues in "India Comes to Terms with a Rising China," that the IN, similar to how the Chinese are preparing to deny access to the U.S. Navy, is preparing to deny the PLAN access to the Indian Ocean.¹⁸⁶ India's actions will likely create instability in the region as its naval policy continues to perform actions that demonstrate the IN has the ability to counter the PLAN's naval force. Jervis' security dilemma theory applies to the IOR, as India fails to distinguish the PLAN's submarines as offensive or defensive weapons, especially if the IN fear losing its second strike capability. Even though a robust Indian Navy could bring stability to the region, the competition that could arise as these two states vie for resources and economic security will most likely create new tensions. The PLAN has chosen to operate more frequently in and around the Indian Ocean. Since Beijing has not always let its intentions be known, India has chosen to counter the Chinese.

¹⁸⁵ Sandeep Unnithan, "China's Submarine Noose Around India," *India Today*, accessed February 12, 2016, <http://indiatoday.intoday.in/story/china-submarine-noose-using-undersea-vessels-to-project-power-in-india/1/405191.html>.

¹⁸⁶ Harsh V. Pant, "India Comes to Terms with a Rising China," in *Strategic Asia 2011–12: Asia Responds to Its Rising Powers: China and India*, ed. Ashley J. Tellis, Travis Tanner, and Jessica Keough (Washington, DC: The National Bureau of Asian Research, 2011), 112.

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IV. JAPANESE VIEWS ON CHINESE SUBMARINE MODERNIZATION

Japan's response to a rising China has particular significance because of their geostrategic rivalry. Japan must be able to protect its maritime interests through its JMSDF, and recent Chinese submarine modernization could threaten Japan's ability to maintain its sovereignty. Postwar Japan has seemed to be a reactive state, only responding to outside pressures. However, Japan has recently taken on new initiatives that would allow its forces to meet and deter future challenges in the maritime domain, rather than employing a force that can only react to a threat. Japan chose to create a more dynamic force because of the strengthening of China's military and perceived aggressive behavior by the PLAN. However, like India's plans, the Defense Policy's objectives are in direct conflict with Chinese modernization. This chapter first discusses Sino-Japanese history. Then, it reveals how Japan has responded to a rising China through strengthening its own military. Finally, it analyzes how the PLAN's use of submarines could potentially threaten Japan's economic development, and their goal of a stable maritime environment.

A. SINO-JAPANESE RIVALRY

To understand better a conflict in the maritime domain, a brief history of the Sino-Japanese rivalry can help to explain the current day situation. China and Japan have a long history that is intertwined with catastrophic events that have generated ill feelings between them. Analysts argue that because Japan and China view their history through their own perspectives, a "history problem" exists, and it could impact regional affairs in a corrosive fashion.¹⁸⁷ Both nations use their own history to pursue specific agendas that have prevented the countries from trusting one another, which causes instability in the region. This section first discusses how the governments of both nations create controversy through the ways that history is interpreted. Then, this section examines how the past creates political and territorial tensions.

¹⁸⁷ Thomas U. Berger, "The Politics of Memory in Japanese Foreign Relations," in *Japan in International Politics: The Foreign Policies of an Adaptive State*, ed. Mike M. Mochizuki and Jitsuo Tsuchiyama (Boulder, CO: Lynne Rienner Pub, 2007), 181.

1. Misaligned Memories

Collective memory creates a lens for the nations to see through, and it is hard for the leaders to provide a different perspective for their people. Thomas Berger defines collective memory as, “ideas that a given society collectively holds about the past.”¹⁸⁸ He then defines the history problem as how the collective memory differs between nations because each country constructs the historical narrative uniquely.¹⁸⁹

It is hard for an organization to put aside its core values to improve stability in the region. The CCP, for example, was created shortly before Japan occupied China. Since the CCP’s existence, it wanted to rid the nation of Japan. Susan L. Shirk writes in *China: Fragile Superpower*, “The Chinese Communist Party’s political legitimacy is bound up with its 1945 victory in the Anti-Japanese War.”¹⁹⁰ Anti-Japanese sentiment is part of the CCP’s history, and its political leaders refuse to overlook this historical memory. Shirk later argues that politicians in China frequently use anti-Japanese rhetoric to mobilize popular support by diverting attention away from domestic problems.¹⁹¹ As the CCP continues to revisit history, it continues to drive a wedge between the two nations by not allowing its population a different lens to look through, which further destabilizes the region.

While China’s current government was created with anti-Japanese sentiment, Japan had a new government formed after its loss in World War II. This leadership had to be created in part due to the failed effort to expand imperial Japan. Japan, in its efforts to start anew, actually employed old members of the imperial leadership while creating a “peaceful” Japan. Berger states, “Many members of Japan’s postwar conservative leadership were directly implicated in the expansion of imperial Japan, the war against the United States, and wartime atrocities.”¹⁹² Like China, Japan after World War II had a

¹⁸⁸ Berger, “The Politics of Memory in Japanese Foreign Relations,” 182.

¹⁸⁹ Ibid., 181.

¹⁹⁰ Susan L. Shirk, *China: Fragile Superpower* (New York; Oxford: Oxford University Press, 2007), 144.

¹⁹¹ Ibid.

¹⁹² Berger, “The Politics of Memory in Japanese Foreign Relations,” 186.

government that contained members with a bias against the other nation, which fostered mutual distrust. As the nations move forward, their different collective memories will continue to foster mistrust against one other. This mistrust helps to fuel the strategic dilemma in the region.

2. Disputed Islands

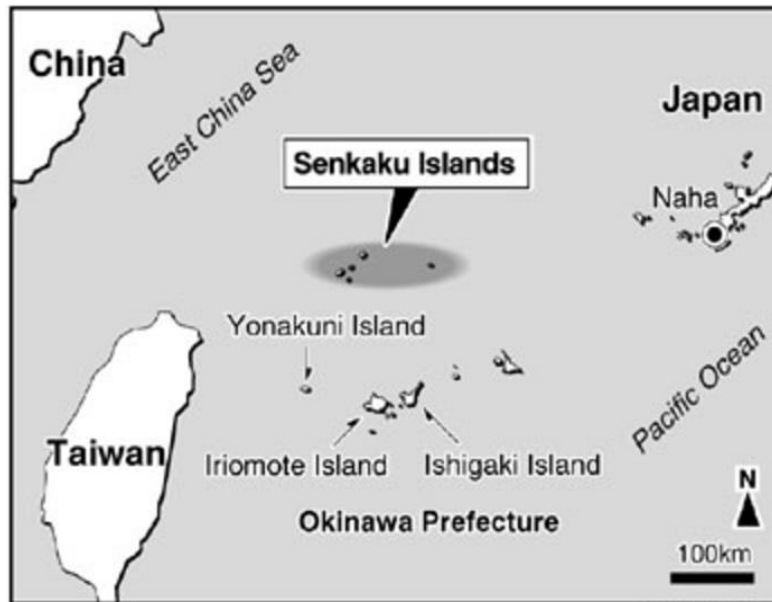
China's and Japan's different memories of the past are carried over into disagreements over the sovereignty of islands in the East China Sea. In China, these islands are known as the Diaoyu Islands, and in Japan, the Senkaku Islands (see Figure 2). Both nations claim the islands under different laws; Japan states that it should be the owner because when it formally incorporated the islands, they were uninhabited. These islands were a land without owner or "occupation of terra nullius," and Japan held a cabinet meeting in 1895 to claim them.¹⁹³ However, China sees it otherwise, and has its own claims. China states the islands were used during the Ming Dynasty (1368–1644), and that Taiwan had control over the land by the Qing Dynasty (1644–1912). Also, China argues that while it gave the islands to Japan under the 1895 Treaty of Shimonoseki, under the Cairo and Potsdam Declarations, Japan should return all territory seized through war.¹⁹⁴ China is attempting to recover what it feels is rightfully its. Each side refuses to back down in this tense situation, as doing so would demonstrate weakness. Both sides seem to want to avoid a military confrontation, but the capacity for conflict exists. Analysts argue that, "due to the brutal Japanese occupation of China in the 1930s, sentiments over the status of the Diaoyu/Senkaku islands run deeper in the Chinese psyche than any other territorial dispute in modern Chinese history."¹⁹⁵ Both states place a large emphasis on nationalism, and much of their identity is found in sovereignty. These islands will continue to be a contested area for the foreseeable future.

¹⁹³ International Crisis Group, *Dangerous Waters: China-Japan Relations on the Rocks* (Asia Report No. 245) (Brussels: Belgium: International Crisis Group, 2013), 2.

¹⁹⁴ Ibid.

¹⁹⁵ Ibid., i.

Figure 2. Disputed Territory



Source: Gavan McCormack, "Small Islands—Big Problem: Senkaku/Diaoyu and the Weight of History and Geography in China-Japan Relations," *The Asia-Pacific Journal: Japan Focus*, accessed August 28, 2015, <http://japanfocus.org/-Gavan-McCormack/3464/article.html>.

B. JAPAN'S RESPONSE TO CHINESE SUBMARINES

As Japan and China's contested history creates current territorial issues, a rising China, and specifically its military capabilities, is creating an Asian security dilemma. In a New Year's speech at the beginning of 2015, Japan's Defense Prime Minister Nakatani argued that China is sailing its naval vessels in the Pacific Ocean near Japan and actions, such as violating territorial waters, are creating a hazardous situation for both nations. He also states that the Japan Self-Defense Forces (JSDF) has a mission to secure peace and independence for Japan, and this force is determined to defend Japanese territory.¹⁹⁶ In addition, former Commander in Chief, Self-Defense Fleet of the JMSDF, retired Admiral Yoji Koda argues, "China has a national objective to be a nuclear power comparable with the United States." To accomplish this objective, he further states the PLAN must

¹⁹⁶ Gen Nakatani, "FY2015 New Year's Greetings by Defense Minister Nakatani," Ministry of Defense, Japan, January 5, 2015, <http://www.mod.go.jp/e/publ/movies/message2015.html>.

“maintain a robust nuclear-powered ballistic missile submarine force and protect this force against antisubmarine warfare capabilities.”¹⁹⁷

Japan feels a need to defend itself because it views China as a threat, but Japan’s security ambitions seem to contradict Article 9 of its constitution. Article 9 states that Japan must not exercise “force as a means of settling international disputes.”¹⁹⁸ In efforts to protect its national interests, coupled with the pressure felt from China, Japan may continue to come closer to remilitarizing. The PLAN’s submarine force has the capability to create further instability in the region. Koda also argues that the JMSDF should in the future “bear greater responsibility in supporting U.S. operations” in the South China Sea.¹⁹⁹ In the meantime, Japan has favored a hard approach in response to a rising China, but some elements of “soft hedging” are evident, which shows Japan is also interested in a balanced approach to confront China. This section first discusses how Japan has increased its military capabilities by increasing its defense budget and by adding new equipment, such as new ships, submarines, and aircraft to its naval inventory. Then, it discusses the elements that have created a soft approach to China. Due to its historic rivalry and proximity to China, Japan has adopted a balanced approach.

1. Hard Hedging

The JMSDF has seen an increase in its core defense budget since Prime Minister Shinzo Abe’s new administration took over in 2012. *IHS Jane’s* states, “The new Japanese government adopted a firmer stance toward Beijing characterized by an enhanced focus upon security issues and national defense policy.”²⁰⁰ This stance has increased core military spending, allowing the JMSDF to upgrade or acquire new equipment to aid in the security of Japan. Not all the increases in spending are directly

¹⁹⁷ Yoji Koda, “Japan’s Perceptions of and Interests in the South China Sea,” *Asia Policy* 21 (January 2016), http://nbr.org/publications/asia_policy/Free/AP21/AsiaPolicy21_SouthChinaSeaRT_January2016.pdf.

¹⁹⁸ “The Constitution of Japan,” accessed October 20, 2015, http://japan.kantei.go.jp/constitution_and_government_of_japan/constitution_e.html.

¹⁹⁹ Koda, “Japan’s Perceptions of and Interests in the South China Sea.”

²⁰⁰ “Defence Budget Overview,” October 5, 2015, <https://janes/ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1303187&Pubabbrev=CNA>.

linked to the PLAN's submarine modernization. However, the Japanese Minister of Defense, General Nakatani, argues that the increase in spending is due to the "changing situation," caused by the Plan's provocative actions²⁰¹ One reason the PLAN's modernization can be viewed as provocative is because some analysts believe that China can have the advantage in the undersea domain. Analyst Toshi Yoshihara argues, "The ASW competition will likely advantage China over time. The PLAN's submarine fleet has been growing larger, quieter and more lethal in the past decade."²⁰² Previous governments in Japan sought to limit or cap military budgets, but Abe's administration has a commitment to defense and the security of Japan because of regional issues. The 2013 Fiscal Year (FY) defense budget grew by 0.8%, the first growth in 11 years, and the 2014 FY budget increased by 2.8% to \$46.4 billion. Previous budget plans set a five-year ceiling of \$191 trillion, but with the 2014–2018 plan, the ceiling was increased \$195 trillion. With these increases, *IHS Jane's* claims that Japan will abandon its defense funding ceiling and military core spending will exceed previous set limits.²⁰³

Japan's budget increases have allowed the JMSDF to procure much needed equipment to counter the Chinese submarine threat. Former Commanding General, Research and Development Command of the Japan Ground Self-Defense Force, retired Lieutenant General Yamaguchi Noboru, argues the Japan, in response to Chinese military modernization, must "increase the effectiveness of its deterrent force."²⁰⁴ First, this section discusses ships, then aircraft, and finally, submarines. Some of the newest ships in the JMSDF inventory are the Hyuga-class and the Izumo-class ships. Both classes are categorized as helicopter-capable destroyers and can be compared to U.S. LHAs. These ships increase the JMSDF's ability to detect the PLAN's submarines. The JMSDF commissioned two Hyuga-class ships, DDH 181 and DDH 182, in 2009 and 2011,

²⁰¹ Justin McCurry, "Japan Reveals Record Defence Budget as Tensions with China Grow," *The Guardian*, January 14, 2015, sec. World news, <http://www.theguardian.com/world/2015/jan/14/japan-reveals-record-defence-budget-as-tensions-with-china-grow>.

²⁰² Toshi Yoshihara, *Going Anti-Access at Sea: How Japan Can Turn the Tables on China*, Maritime Strategy Series (Washington, DC: Center for a New American Security, 2014), http://www.cnas.org/sites/default/files/publications-pdf/CNAS%20Maritime2_Yoshihara.pdf.

²⁰³ "Defence Budget Overview."

²⁰⁴ Noboru Yamaguchi, *Deciphering the New National Defense Program Guidelines of Japan* (Tokyo: The Tokyo Foundation, 2011), http://www.tokyofoundation.org/en/additional_info/PRB_N.Ymgc.pdf.

respectively. These ships have the capability to launch or land approximately three SH-60Ks simultaneously, allowing for more ASW assets than the Atago-class or Akizuki-class destroyers. These ships also have six 324 mm torpedo tubes that can carry 12 rounds of vertically launched anti-submarine rockets (ASROC), and possess an OQQ-21 bow-mounted sonar.²⁰⁵ The main feature of this ship is the large number of ASW helicopters it can support. The ship features a large hangar bay that can hold up to 10 aircraft, which allows this ship to deploy as a force multiplier in the ASW realm.

This Izumo-class is the largest in the JMSDF inventory since World War II, measuring 813 feet long, just 200 feet shorter than a typical U.S. aircraft carrier. A JMSDF officer argues that this class ship “heightens our ability to deal with Chinese submarines that have been more difficult to detect.”²⁰⁶ The JMSDF commissioned its first ship in this class, JDS *Izumo* (DDH 183), in 2015, and it has plans to build more in this class.²⁰⁷ The Izumo-class is not fitted with torpedoes, but does have the OQQ-21 hull-mounted sonar. Its biggest upgrade over the Hyuga-class is the ability to launch and land more ASW helicopters. While the Hyuga-class has four spots on its flight deck, the Izumo-class has five spots and its hangar bay can support up to 16 ASW aircraft, which enhances the ASW picture for the JMSDF.

The JMSDF has two main ASW aircraft, Seahawk helicopters and the new P-1 airplanes. JMSDF first used Seahawks, the SH-60J version in 1991, and possessed 103 of this type aircraft. It later updated this helicopter to the SH-60K variant.²⁰⁸ The JMSDF has added 55 of the SH-60K aircraft to its inventory since 2000. This new version has improved features like the Automatic Helicopter Combat Direction System (AHCDS), which allows multiple helicopters to share tactical information, a helpful feature while searching for a submarine. The Kawasaki P-1 aircraft is an indigenous design that

²⁰⁵ Saunders, *IHS Jane's Fighting Ships: 2013–2014*, 423.

²⁰⁶ “Japan Commissions Izumo ‘Helicopter Carrier’ as Largest Ship in MSDF Fleet,” March 25, 2015, http://ajw.asahi.com/article/behind_news/politics/AJ201503250084.

²⁰⁷ “Japan Takes Delivery of New Izumo-Class Destroyer,” March 26, 2015, <http://search.proquest.com.libproxy.nps.edu/docview/1670162459/29E9C8B2BF3B42E9PQ/4?accountid=12702>.

²⁰⁸ “Mitsubishi (Sikorsky) SH-60,” October 17, 2014, <https://janes.ihs.com.libproxy.nps.edu/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1342714&Pubabbrev=JAWA>.

replaced its aging P-3 fleet. The P-1 entered into service in 2013, and includes some capable ASW features like the magnetic anomaly detector (MAD), that were not included in the new U.S. Navy P-8 Poseidon.²⁰⁹ Commander Jun Masuda of the JMSDF states that the P-1 has the “mobility to fly out to distant destination waters swiftly and operate for a long time while remaining in operational areas is necessary” for detecting submarines.²¹⁰

Finally, the JMSDF is in the process of acquiring a new fleet of Souryu-class SSKs. The JMSDF already possesses 10 Souryu-class submarines, all equipped with AIP technology. Japan wants its 11th submarine in this class to possess lithium-ion battery technology, which would be the world’s first submarine to employ this technology. The government’s plan is to have 22 SSKs by 2020. To accomplish this task, Tokyo, in addition to building new submarines, will have to extend the life of its existing submarines.²¹¹

Japan has modified, and continues to upgrade, its military capabilities in response to China’s military rise. Tomotaka Shoji, an analyst at Japan’s NIDS, argues that tensions, because of China’s assertiveness, in the South China Sea have created an unstable strategic environment, and that aggravated disputes could pose a serious threat.²¹² Japan is limited by its constitution but will continue to do everything that it can to protect its nation within these restrictions. Japan will have to rely on its alliances to fill in areas where it does not have the capabilities, but the JMSDF is a formidable naval force, able to track and hunt submarines. Retired Admiral Koda argues that China’s “true intent is difficult to ascertain...I think we should accurately determine China’s military

²⁰⁹ Tyler Rogoway, “Japan’s Totally Original Maritime Patrol Jet Is Hunting for Buyers,” *Foxtrot Alpha*, accessed February 15, 2016, <http://foxtrotalpha.jalopnik.com/japans-totally-original-maritime-patrol-jet-is-hunting-1716182328>.

²¹⁰ Chieko Tsuneoka, “Japan’s New Surveillance Jet Expands Scope for Patrols,” *The Wall Street Journal*, June 26, 2015, <http://blogs.wsj.com/japanrealtime/2015/06/26/japans-new-surveillance-jet-expands-scope-for-patrols/?mod=WSJBlog&mod=japanblog>.

²¹¹ “Defence Budget Overview.”

²¹² Shoji, “The South China Sea: A View from Japan.”

power and calmly deal with it.”²¹³ However, until Japan fully assesses the PLAN, its forces will continue to have apprehensions, and the region will be characterized by instability.

2. Soft Hedging

The rise of China is not only a military threat, as its economy has also been increasing in size and power, and Japan recognizes this threat. It has initiated several policies that have increased ties between the two nations as a means of engaging China, first economically, and second, in security discussions. From 1999 to 2004, Japan’s foreign direct investment (FDI) into China rose from \$770 million to \$4.567 billion.²¹⁴ These increases were a result of an optimistic view that Japan and former Prime Minister Junichiro Koizumi held of China. Prime Minister Koizumi recognized that China’s economic growth presented an opportunity for Japan and sought bilateral cooperation.²¹⁵ Later in 2012, Japan’s FDI in China was as high as \$7.38 billion, but regional incidents caused the FDI to drop. In September 2012, Japan “purchased” the Senkaku/Diaoyu Islands from a private Japanese landholder, and then Prime Minister Abe visited the Yasukuni Shrine. These events caused investors to worry, and FDI then decreased by 4.28 percent to \$7.03 billion dollars.²¹⁶ Regardless of the fluctuations, the economic ties could create unwanted risk if a military engagement were to occur.

The second way that Japan has been initiating a relationship with China is in the ASEAN. Japan and China are both members of the ASEAN +3 Cooperation, which seeks “mutual respect for the independence, sovereignty, equality, and territorial integrity of all

²¹³ Yoji Koda and Noboru Yamaguchi, “Accidental Explosion or Maturity? The Future of China’s Expanding Military Power—Capability and Intentions Analyzed by Former Senior Leaders of the Japan Self-Defense Forces,” Discuss Japan—Japan Foreign Policy Forum, accessed February 15, 2016, <http://www.japanpolicyforum.jp/archives/diplomacy/pt20131008013233.html>.

²¹⁴ Mike M. Mochizuki, “Japan’s Shifting Strategy toward the Rise of China,” *The Journal of Strategic Studies* 30, no. 4–5 (October 2007): 756.

²¹⁵ Ministry of Foreign Affairs, *Diplomatic Bluebook* (Tokyo: Ministry of Foreign Affairs, 2005), 35, <http://www.mofa.go.jp/policy/other/bluebook/2005/ch2-a.pdf>.

²¹⁶ Jiabao Li, “Tensions Take Toll on China-Japan FDI,” *China Daily, Hong Kong Ed.*, January 17, 2014.

nations.”²¹⁷ Japan seeks to leverage ASEAN and its members, including China, to adopt a unified understanding on the laws regulating the maritime domain.²¹⁸ Prime Minister Abe has been proactive in this association by meeting with member states individually and using ASEAN as a forum to bring stability to the maritime domain. Japan claims that China asserts excessive claims in the China Seas. In an attempt to counter China in a less aggressive form, Japan would like member states to reject China’s interpretation of the United Nations Convention on the Law of the Sea (UNCLOS), which limits the freedom of navigation of non-commercial ships.²¹⁹ Japan is demonstrating to China that it is not going to tolerate China’s recent maritime activities that it deems hostile. Japan’s soft hedging against China is needed in a time when China has become aggressive in the maritime domain because other nations may not have the same ASW capabilities as Japan. China and Japan may find themselves in conflict since each nation is pursuing its own interests in this environment.

In addition to ASEAN, Japanese and Chinese leaders have agreed to create a bilateral maritime mechanism to increase communication between the two states. The intent is for this bilateral mechanism to prevent future conflict.²²⁰ It is a positive step for these two states in the hope to prevent a security dilemma.

C. NAVAL STRATEGY IN CONFLICT

Japan has implemented both hard and soft policies in an attempt to counter China. However, another aspect of the security dilemma is the conflicting naval strategy between the two nations. Japan sees its defense forces as the primary means to protect its national security.²²¹ To direct its forces, Japan has issued the *National Defense Program*

²¹⁷ “ASEAN Overview,” accessed October 30, 2015, <http://www.asean.org/asean/about-asean/overview>.

²¹⁸ Jeffrey Hornung, “Japan’s Pushback of China,” *The Washington Quarterly* 38, no. 1 (Spring 2015): 172.

²¹⁹ Ibid.

²²⁰ “Japan, China Agree to Maritime Communication Mechanism to Prevent Conflict,” November 5, 2015, <http://www.japantimes.co.jp/news/2015/11/05/national/politics-diplomacy/japan-china-agree-to-maritime-communication-mechanism-to-prevent-conflict/>.

²²¹ Ministry of Defense, *National Defense Program Guidelines for FY 2014 and Beyond*, 7.

Guideline to provide its various departments a roadmap to achieve its national objectives, as well as a *National Security Strategy*. Several national interests of Japan are in conflict with China and the PLAN's modernization. These conflicts will be problematic as both nations compete to achieve their own objectives.

The first clash of national interests between Japan and China is the need for economic development through free trade in the Asia-Pacific region. Japan desires an “international environment that offers stability, transparency and predictability.”²²² Both states are competing in the same maritime region for the ability to maintain free trade. The second national interest of Japan that could lead to a confrontation with China is the “maintenance and protection of international order based on rules and universal values, such as freedom, democracy, respect for fundamental human rights, and the rule of law.”²²³ The PLAN's submarines have the capability to prevent Japan from achieving two of its national objectives required to safeguard its national interests. Analyst Alessio Patalano argues the PLAN has increased its capabilities to a new level.

The PLAN submarine force had a crucial mission in providing a credible strategic deterrent...It set the intellectual foundations to link its existence to the security of the Chinese economy by presenting its roles in relation to the security of sea lanes, energy and maritime resources – all vital components of the country's economic reforms.²²⁴

Japan's Ministry of Defense requires that its forces “improve the security environment of the Asia-Pacific region, and prevent the emergence of and reduce direct threats to Japan.”²²⁵

1. Economic Development

Japan desires for its nation to grow economically. For this growth to occur, it must maintain economic security, freedom of its trade routes on the ocean, and access to

²²² Ministry of Defense, *National Security Strategy: December 17, 2013* (Tokyo: Ministry of Defense, 2013), 4, <http://www.cas.go.jp/jp/siryoku/131217anzenhoshou/nss-e.pdf>.

²²³ Ibid.

²²⁴ Alessio Patalano, “Seapower and Sino-Japanese Relations in the East China Sea,” *Asian Affairs* 45, no. 1 (January 2, 2014): 34–54, doi:10.1080/03068374.2013.876809.

²²⁵ Ministry of Defense, *National Security Strategy: December 17, 2013*, 5.

natural resources. Japan needs stability at sea to maintain economic prosperity, as outlined in Japan's *National Security Strategy*.²²⁶ China's recent aggressive actions, coupled with its military modernization, have the capacity to prevent Japan from obtaining its national interests of economic development and stability in the maritime domain. Japan, as an island nation, relies heavily upon energy imports to provide for its people and create development. Up to 70 percent of its energy requirements are imported through the South China Sea.²²⁷ Japan's businesses also import rare earth materials used for many different industrial purposes, and it is one of China's largest customers of these materials.²²⁸ Japan needs these imports for economic growth, and for the sea routes to remain open. If not, it may have to alter its energy sources and business structures.

China not only has power in the economic security realm. Its military modernization can cause disruptions to vital sea lanes needed for economic development as well, which worries Japan, especially since its military has shown an increased presence in the region. Japan closely monitors China's activities in the South China Sea with the smaller maritime states, and Japan argues, "China is also expanding and intensifying its activities in the maritime and aerial domains farther offshore than before."²²⁹ The interests of Japan are in direct competition with China, which creates a destabilized situation in the region. Without diplomatic engagement and transparency from China, the tensions in East China Sea could escalate.

2. Environment of Stability, Transparency and Predictability

Japan continues to strive to create a stable environment in and around the China Seas and Pacific region through its policies and objectives. Another national interest that Japan would like to achieve to realize its goals of "open and stable seas" is "an

²²⁶ Ministry of Defense, *National Security Strategy: December 17, 2013*, 4.

²²⁷ Renato Cruz De Castro, "China and Japan in Maritime Southeast Asia: Extending Their Geo-Strategic Rivalry by Competing for Friends," *Philippine Political Science Journal* 34, no. 2 (2013): 153, <http://dx.doi.org/10.1080/01154451.2013.851491>.

²²⁸ Keith Bradsher, "In Dispute, China Blocks Rare Earth Exports to Japan," *New York Times*, September 23, 2010, <http://search.proquest.com.libproxy.nps.edu/docview/1458402069/fulltextPDF/AA3E0604C9494B9FPQ/8?accountid=12702>.

²²⁹ Ministry of Defense, *National Defense Program Guidelines for FY 2014 and Beyond*, 3–4.

international environment that offers stability, transparency, and predictability.”²³⁰ Recently, the maritime environment has experienced unpredictable events from the PLAN and Japan has viewed these actions as aggressive, especially in Japan’s territorial waters, exclusive economic zones (EEZs), and the Senkaku Islands

First, territorial waters extend from a coastline out to 12 nautical miles, and states have the right to establish sovereignty in this area according to UNCLOS Articles 2 and 3.²³¹ However, when islands or straits are considered, an interpretation of the law must be made. Legal passage of vessels through straits is viewed differently depending on the state and the wording that the state uses.

In 2004, a Chinese Han-class submarine intruded into territorial waters claimed by Japan, the Ishigaki Strait, which caused Japan to think that China was showing off its military capabilities in efforts to provoke a response from the Japanese.²³² Japan wanted China to announce the submarine’s intentions prior to the transit to offer some transparency to the situation. China’s official response regarding this event claimed the submarine traveled through the area because a technical error caused the poor navigation. Japan’s ASW capabilities had not been tested by China before this incident, and Japan was able to track the vessel for two days using its P-3 aircraft, ASW destroyers, and its helicopters, which proved the value of Japan’s ASW capabilities.²³³ When these types of ASW assets are used effectively, continually updating submarine tracking information, and relaying that data to the next asset, submarines have a difficult time eluding its opponent. These unpredictable events have the capacity to escalate any situation into a hostile environment, which creates an unstable region.

The second maritime area of dispute between Japan and China concerns EEZs. These nautical areas begin at the coast and extend out to 200 nautical miles, according to

²³⁰ Ministry of Defense, *National Security Strategy: December 17, 2013*, 4.

²³¹ Peter A. Dutton, “International Law and the November 2004 ‘Han Incident,’” *Asian Security* 2, no. 2 (August 1, 2006): 88, doi:10.1080/14799850600767267.

²³² Nao Shimoyachi, “Chinese Submarine Intrusion Considered an Act of Provocation,” *Japan Times*, November 13, 2004, <http://www.japantimes.co.jp/news/2004/11/13/news/chinese-submarine-intrusion-considered-an-act-of-provocation/#.VdwH9Hj4urJ>. Dozens of such cities are needed.

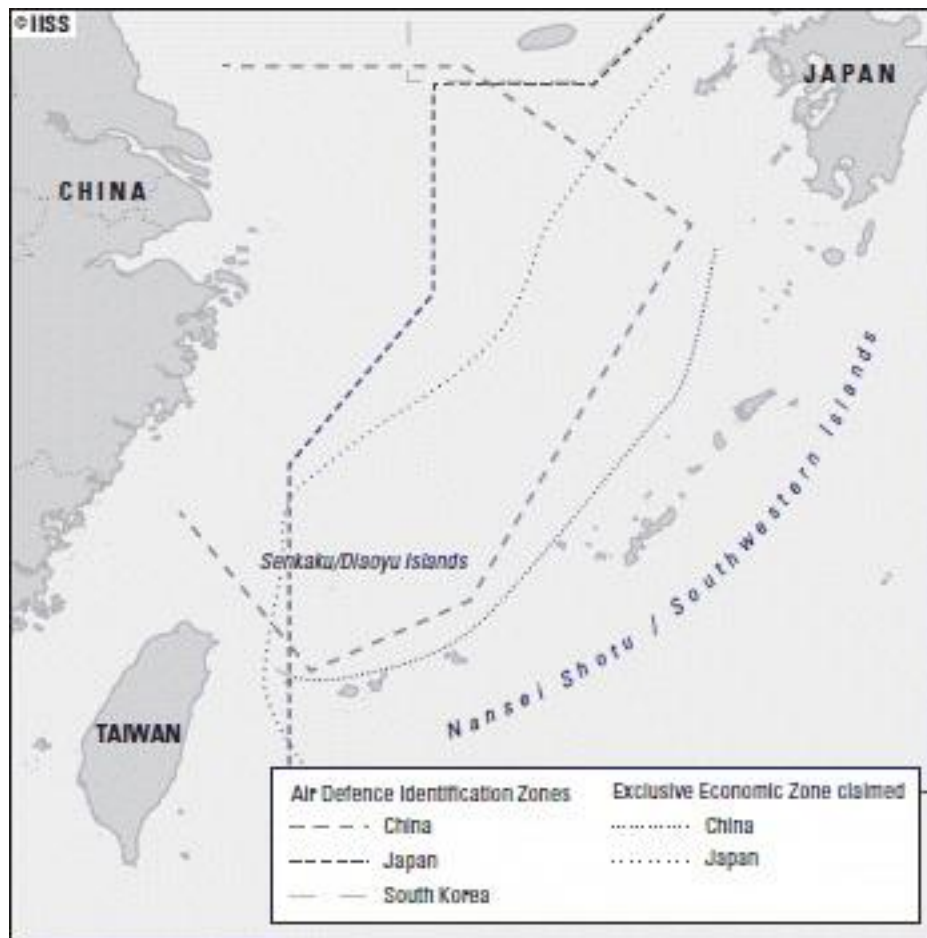
²³³ Dutton, “International Law and the November 2004 ‘Han Incident,’” 88–93.

UNCLOS Articles 55 and 56. Within this area, states have the right over the economic use of fish and mineral resources.²³⁴ Figure 3 shows that the two states have overlapping EEZs, which is another source of contention because neither state wants to concede the natural resources to the other. In an attempt to challenge each other, both Japan and China have patrolled the areas more frequently, specifically near the disputed islands. Christopher W. Hughes argues in *International Affairs* that China has frequently launched “research ships” and warships into Japan’s EEZ near the disputed islands, and these actions are deemed as aggressive in intent. He further states that China has also been conducting undersea gas exploration near Japan’s EEZ, that have promoted Japanese fears that China would draw gas from Japan’s side of the EEZ.²³⁵

²³⁴ J. R. V. Prescott, *The Maritime Political Boundaries of the World* (New York: Methuen & Co., 1986), 38.

²³⁵ Hughes, “Japan’s Response to China’s Rise: Regional Engagement, Global Containment, Dangers of Collision,” 841.

Figure 3. Overlapping EEZs



Source: J. R. V. Prescott, *The Maritime Political Boundaries of the World* (New York: Methuen & Co., 1986), 38.

D. CONCLUSION

Japan and China, two of the most capable and prominent players in the region, have been affected with a historical problem and each desires to maintain its freedom and sovereignty. These two nations will never agree on a common viewpoint on the past because each government portrays a specific narrative to its population. This portrayal creates tension that does not have a remedy and spills over to current issues.

Japan, in response to China's rising military, understands that its constitution will not allow the JMSDF to have all necessary pieces to have a complete warfighting package. Since Japan understands its military limits, it takes a dual approach to the rise of China through both hard and soft hedging, which could create greater stability.

Nevertheless, it possesses a considerable force to counter the PLAN and its submarines. Japan's military enhancements in the ASW realm, a direct result of China's military modernization, allow the JMSDF to monitor the PLAN better, and early detection can potentially prevent a confrontation. Japan must also rely on its alliance with the United State for its broader security. However, China's military rise may cause Japan to desire to play a larger role in the alliance, which is discussed further in the next chapter. This analysis reveals that the PLAN's submarines seem to be tools to advance China's economic security rather than just to exert military power. As China advances its economic security, the intentions for its submarines are not fully known, and this uncertainty may cause Japan to overreact in efforts to protect itself, causing a security dilemma to spiral.

V. UNITED STATES' VIEWS ON CHINESE SUBMARINE MODERNIZATION

The rise of China is a cause of concern to the United States because history has shown that rising powers are prone to create conflict. Thucydides identified this concern when he claimed that a rising Athens led to the Peloponnesian War due to fear that was created in Sparta.²³⁶ China has recently been re-emerging as a world power, but after about 150 years of maintaining a weak profile.²³⁷ Both China and the United States should proceed cautiously with future endeavors, as they both have interests in avoiding conflicts that might weaken them. China's military and economy are growing, but because of the complexity of international relations, its state is intertwined with many nations, including the United States, which requires U.S. cooperation. Even though the United States has economic incentives to cooperate with China, the PLAN's submarine modernization has caused it to shift its foreign policy attention to the Pacific region. Beginning in 2012, former U.S. Secretary of Defense Leon Panetta announced that the U.S. Navy would shift its assets, and by 2020, 60% would be focused on the Pacific region, while 40% would focus on the Atlantic region.²³⁸ The United States has broader interests in promoting a multifaceted approach to create a region of stability. This chapter first discusses divergent security concerns that have created distrust between China and the United States. Second, it analyzes the threats that the PLAN's submarine modernization present to the U.S. military.

A. DIVERGENT SECURITY CONCERNS

To understand how China views its relations with other nations, and what drives its security concerns, it is vital to look at its history, which has shaped its current thinking. The Chinese culture is one of the oldest cultures today, and tends to analyze its

²³⁶ Thucydides, *History of the Peloponnesian War* (Harmondsworth, U.K.: Penguin, 1972), 49.

²³⁷ Shirk, *China: Fragile Superpower*, 4.

²³⁸ Julian E. Barnes, "World News: U.S. Plans Naval Shift Toward Asia—Pacific to Host 60% of Navy by 2020, Defense Secretary Says, Rejecting View That Move Is Designed to Contain China," *Wall Street Journal, Eastern Edition*, June 2, 2012.

past to prevent future mistakes by detailing a historical memory. Zheng Wang defines historical memory as, “the Chinese people’s collective historical consciousness about the country’s traumatic national experiences.”²³⁹ The culture has not forgotten what has happened to the nation, and this narrative of a century of humiliation is a key component to today’s Chinese national interests. In the mid-19th century, Western powers forced open China’s door with gunboats.²⁴⁰ Internal turmoil and foreign aggression gradually turned China, which was once a strong nation, into a subjugated and semi-colonial society. The country became poor and weak, and the people suffered from wars and chaos. From these events grew frustration, and following World War II, China was poised for revolution, never forgetting what had happened. Since the war, the United States has created several alliances that have created a security concern for China. This section first reviews the alliances that cause concern for China, and then it discusses three specific incidents that further shape the Chinese views of the west.

1. U.S. Alliances

The U.S.’ alliances with Japan, the Republic of Korea, and Taiwan, are a source of contention with China. China, a stance opponent of alliances, believes that these agreements are not conducive for security. Former Chinese President Jiang Zemin delivered a speech in which he stressed the importance of an independent foreign policy to achieve peace.²⁴¹ The United States, on the other hand, values foreign policy through alliances as a way to strengthen support for democracy and freedom. As China witnesses the United States maintaining its alliances, as well as creating policies that pivot to the east, China will continue to have concerns. One concern that has surfaced among Chinese analysts is that the United States is attempting to contain China.²⁴² This concern has

²³⁹ Wang, *Never Forget National Humiliation*, 13.

²⁴⁰ Conrad Schirokauer and Donald N. Clark, *Modern East Asia: A Brief History*, 2nd ed. (Boston: Houghton Mifflin, 2008), 128.

²⁴¹ Jiang Zemin, “Hold High the Great Banner of Deng Xiaoping Theory for an All-Round Advancement of the Cause of Building Socialism with Chinese Characteristics to the 21st Century,” *Federation of American Scientists*, accessed January 3, 2016, <http://fas.org/news/china/1997/970912-prc.htm>.

²⁴² Michael S. Chase, “Chinese Suspicion and US Intentions,” *Survival* 53, no. 3 (May 2011), doi:10.1080/00396338.2011.586211.

increased as the United States enters into security relationships with other nations in the region, such as the Philippines and Singapore.²⁴³ The growing security concern of China will not improve, but could further implicate the security of the region. The United States must reassure China that it welcomes China as a growing power while still maintaining a defensive posture.

2. Chinese Embassy in Yugoslavia

A recent incident drove a wedge further between the United States and China, as evident during the accidental U.S. bombing of the Chinese Embassy in Belgrade, Yugoslavia, in 1999. The U.S. Air Force had been performing bombing missions to pressure Yugoslavia to stop persecuting Albanians in Kosovo. However, on May 7, an American B-52 bomber accidentally targeted the Chinese Embassy in Belgrade, Yugoslavia, killing three Chinese and injuring 20.²⁴⁴ This incident led to protests in China and damaged relations between the two nations. Many Chinese believe that the bombing was intentional and that an accident could not have occurred because of the advanced technologies of the United States²⁴⁵ Leaders of the CCP spread anti-American rhetoric following this event. Li Peng, the second highest member of the CCP in 1999 stated, “This incident, more than anything else, reminds us that the United States is an enemy. It is by no means a friend, as some say.” Li Lanqing, another top-ranking official of the CCP also stated, “The United States has always raised the banner of upholding world peace and protecting human rights and equality, yet it has used military force to conduct interference and persecution and to compel other countries to submit.”²⁴⁶ After this incident, Sino-U.S. relations had an underlying tone of suspicion, with the two states never fully gaining each other’s trust. To this day, the leadership of both states recognizes that a trust deficit exists, but military actions on both sides fail to reduce this deficit.

²⁴³ Tim Huxley and Benjamin Schreer, “Standing up to China,” *Survival* 57, no. 6 (November 2015), doi:10.1080/00396338.2015.1116159.

²⁴⁴ Shirk, *China: Fragile Superpower*, 212.

²⁴⁵ *Ibid.*, 218.

²⁴⁶ Chinese Law & Government, “The Bombing of China’s Embassy in Yugoslavia,” 35, no. 1 (February 2002).

3. EP-3 Aircraft Incident

Several years after the embassy incident, an American EP-3 aircraft collided with a Chinese F-8 fighter jet over international waters. This collision caused the American aircraft to make an emergency landing on Hainan Island and the loss of the Chinese pilot at sea.²⁴⁷ This event increased the trust deficit even more. China claims that the U.S. aircraft interfered with Chinese radio communications, while the U.S. reports the EP-3 aircraft performed a routine operation, no different from what it had performed in the past.²⁴⁸ Throughout the incident, the United States maintained a neutral position, while China persisted that it was a victim and demanded an apology from the United States.²⁴⁹ *The Wall Street Journal* reported, “China’s international legal obligations require it to honor other countries’ freedom of movement outside that 12-mile zone, but Beijing has tried to ban foreign militaries from conducting surveillance within its 200-mile exclusive economic zone as well.”²⁵⁰ China views the United States as intruding into its space, and because of its past, will not allow its state to be a victim, which seems to be causing it to act more aggressive.

4. USNS *Impeccable* Incident

The third incident between the United States and China occurred in 2009. The USNS *Impeccable*, an ocean surveillance ship, was conducting legal military activities in China’s EEZ. China took aggressive action because of a different interpretation of international laws, and sent five vessels to the same area to harass the USNS ship. China believes that a nation should be able to exercise greater control in its own EEZ; however,

²⁴⁷ Edward Slingerland, “Collision with China: Conceptual Metaphor Analysis, Somatic Marking, and the EP-3 Incident,” *International Studies Quarterly* 51, no. 1 (March 2007).

²⁴⁸ Elisabeth Rosenthal with David E. Sanger, “U.S. Plane in China after It Collides with Chinese Jet,” *The New York Times*, April 2, 2001, sec. World, <http://www.nytimes.com/2001/04/02/world/us-plane-in-china-after-it-collides-with-chinese-jet.html>.

²⁴⁹ Slingerland, “Collision with China: Conceptual Metaphor Analysis, Somatic Marking, and the EP-3 Incident.”

²⁵⁰ “China’s Reckless Military,” Eastern edition, August 28, 2014, <http://libproxy.nps.edu/login?url=http://search.proquest.com/docview/1556916802?accountid=12702>.

this interpretation has no basis in international law.²⁵¹ The Chinese vessels maneuvered close to the USNS *Impeccable*, and eventually stopped directly in front of it, causing the *Impeccable* to execute an emergency stop.²⁵² China is demonstrating that it will not tolerate any type of actions that it deems unacceptable even though the actions may be legal in the international system. The United States should continue to exercise its rights in international waters to demonstrate that it will not accept aggressive behavior.

B. U.S. RESPONSE TO CHINESE SUBMARINE MODERNIZATION

The Obama administration in fall of 2011 announced that it would intensify its presence in East Asia through its foreign policy known as the “pivot” and then later the “rebalance” to Asia. This policy did not shift the goals for the region, but merely shifted the means with which to achieve the same goals. One goal, outlined in the U.S. strategic guidance document *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense*, is for the United States to project power in areas where U.S. access may be denied, such as the maritime regions of East Asia.²⁵³ China’s military modernization has the capability to challenge the U.S. military, and the Obama administration has decided that action has a greater benefit than inaction in the region. This section analyzes why the Obama administration initiated a shift in foreign policy to East Asia, and what the United States has done to bolster its capabilities in the region.

1. Threat Perceptions Seen from the United States

As mentioned earlier in this thesis, China argues that Taiwan cannot be separated from China, because they are one, and the United States should not have interfered in this civil war in 1950 by siding with Taiwan.²⁵⁴ China saw this act as interference into its

²⁵¹ Raul Pedrozo, “Close Encounters at Sea: The USNS *Impeccable* Incident,” *Naval War College Review* 62, no. 3 (Summer 2009), <https://www.usnwc.edu/getattachment/d11a2362-fa30-4742-8ec4-c8bed2025114/Close-Encounters-at-Sea--The-USNS-Impeccable-Incid.aspx>.

²⁵² Chase, “Chinese Suspicion and US Intentions.”

²⁵³ United States Department of Defense, *Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense* (Washington, DC: Department of Defense, 2012), http://archive.defense.gov/news/Defense_Strategic_Guidance.pdf.

²⁵⁴ Taiwan Affairs Office & Information Office and State Council, The People’s Republic of China, “The Taiwan Question and Reunification of China.”

internal affairs and the United States is responsible for creating stumbling blocks in the Sino-U.S. relations.²⁵⁵ The United States sees a potential threat in China with the ability to jeopardize the securities of the people of Taiwan through China's ability to execute A2/AD in the Taiwan Straits. Andrew F. Krepinevich Jr., president of the Center for Strategic and Budgetary Assessments, argues that the PLAN has bolstered its capabilities "with the express goal of making the western Pacific a no-go zone for the U.S. military."²⁵⁶

2. Hard Hedging

The DOD is challenged to provide for the freedom of navigation for its forces and its allies. However, the Chinese military has the potential to deny the United States the ability to navigate in the maritime domain, and this strategy is known A2/AD. The U.S. *Air-Sea Battle Concept* defines this strategy as capabilities that "challenge and threaten the ability of U.S. and allied forces to both get to the fight and to fight effectively once there."²⁵⁷ Submarines play a role in the A2/AD concept by denying a force adequate freedom of navigation.²⁵⁸ As the PLAN increases its A2/AD capabilities through its submarine modernization, the ability of the United States to uphold its regional security guarantees may be doubted. The United States acknowledges the Chinese build-up when it states in its report to Congress that the "military's continued emphasis on developing anti-access/area denial capabilities makes clear that China seeks the capability to limit the U.S. military's freedom of movement in the Western Pacific."²⁵⁹ This emphasis has several implications, which is why the United States has had to adjust its military policies.

²⁵⁵ Taiwan Affairs Office & Information Office and State Council, The People's Republic of China, "The Taiwan Question and Reunification of China."

²⁵⁶ Andrew F. Krepinevich, "How to Deter China," *Foreign Affairs*, April 2015, <https://www.foreignaffairs.com/articles/china/2015-02-16/how-deter-china>.

²⁵⁷ Department of Defense, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Washington, DC: Department of Defense, 2013), 2, <http://www.defense.gov/Portals/1/Documents/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf>.

²⁵⁸ Andrew F. Krepinevich, Barry Watts, and Robert Work, *Meeting the Anti-Access and Area-Denial Challenge* (Washington, DC: Center for Strategic and Budgetary Assessments, 2003).

²⁵⁹ "U.S.-China Economic and Security Review Commission."

The United States needed a concept that accomplished several goals. The first was to identify the specific threat and the second was to reassure its allies and regional partners that the United States is a credible military partner. By drafting the *Air-Sea Battle Concept*, the United States identified that any force that attempts to deny the international community access to international waters is a threat and it will not retreat or submit to that force.²⁶⁰ The United States responded to this threat by bolstering the U.S. undersea warfare presence in the region through air assets, surface assets, and subsurface assets. Regarding ASW, former U.S. Navy 7th Fleet Commander, Vice Admiral Robert L. Thomas, argues, “Anti-submarine warfare is one of the most challenging yet critical tasks that our navies exercise. It takes a strong combined body of talented people and a cooperative plan to work together to achieve our full potential in ASW capabilities.”²⁶¹ A key component of ASW is the helicopter squadrons. Helicopter Maritime Strike Squadron 77 (HSM-77) was established in 1987 at Naval Air Station North Island in San Diego.²⁶² This squadron originally flew the SH-60B helicopter, but transitioned to the MH-60R helicopter. The new version of this helicopter is critical for maritime dominance, and remains the only organic airborne anti-submarine warfare asset within strike groups that also deploys independently on warships.²⁶³ In 2012, the same year the Air-Sea Battle Concept was released, the U.S. Navy permanently moved HSM-77 from San Diego to Atsugi, Japan, as part of the rebalancing to the region.

In addition to moving more ASW helicopters to the region, in 2013, the U.S. Navy also began to deploy its new P-8A Poseidon aircraft. The P-8A is an advanced anti-submarine and reconnaissance aircraft.²⁶⁴ Patrol Squadron 5 (VP-5) completed its first

²⁶⁰ Department of Defense, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges*, i.

²⁶¹ “U.S. and ROK Navies Sign Anti-Submarine Warfare Charter to Increase Coop,” accessed February 15, 2016, <http://www.pacom.mil/Media/News/tabid/5693/Article/564497/us-and-rok-navies-sign-anti-submarine-warfare-charter-to-increase-cooperation-a.aspx>.

²⁶² “HELMARSTRIKERON SEVEN SEVEN,” accessed October 20, 2015, <http://www.secondfleet.navy.mil/airfor/hsm77/Pages/default.aspx>.

²⁶³ U.S. Naval Aviation Enterprise, *Naval Aviation Vision: 2014–2025* (Coronado, CA: U.S. Naval Aviation Enterprise, 2014), 65, http://www.navy.mil/strategic/Naval_Aviation_Vision.pdf.

²⁶⁴ Scott W. Harold, “Is the Pivot Doomed? The Resilience of America’s Strategic ‘Rebalance,’” *The Washington Quarterly* 37, no. 4 (Winter 2015): 93–94.

deployment with the P-8 aircraft, and it operated out of Okinawa, Japan, as well as the Philippines. During the deployment, the squadron completed over 350 missions and flew 3,600 hours.²⁶⁵ After seven months, VP-45 and their six P-8 aircraft relieved VP-5. VP-45 also operated out of Okinawa, Japan.²⁶⁶ The P-8A working in conjunction with the MH-60R creates one of the world's most elite anti-submarine tandems. The Navy needed its most advanced assets in this contested area to legitimize its battle concept and to prove to its allies that the United States will stand by its commitment to the region by sustaining security in the international arena.

The United States also strengthened its ballistic missile defense (BMD) capabilities in addition to its undersea warfare elements. The BMD element of the Air-Sea Battle Concept provides credibility to the United States that its allies will be protected from a missile threat. The U.S. Navy's BMD ships use the AEGIS system that provides a responsive missile defense capability.²⁶⁷ USS *Benfold* (DDG-65), USS *Barry* (DDG-52), USS *Milius* (DDG-69), and USS *Chancellorsville* (CG-62), will perform a homeport shift to Japan, while only the USS *Lassen* (DDG-82) will shift to back to the United States.²⁶⁸ These four ships have all been upgraded with the newest AEGIS equipment and will be a part of the Yokosuka Forward Deployed Naval Forces (FDNF).²⁶⁹

The United States also moved more of its submarine assets to bolster the region. The USS *Topeka* (SSN 754) shifted its homeport to Guam in 2015. An additional

²⁶⁵ Meghann Myers, "'Mad Foxes' Return from Their First P-8A Deployment," *Navy Times*, February 13, 2016, <http://www.navytimes.com/story/military/2015/02/13/patrol-squadron-five-returns-p-8-deployment/23292529/>.

²⁶⁶ Mike Yeo, "U.S. Navy Growing P-8 Poseidon Operations in the Western Pacific," *USNI News*, March 2, 2015, <http://news.usni.org/2015/03/02/u-s-navy-growing-p-8-poseidon-operations-in-the-western-pacific>.

²⁶⁷ Sam LaGrone, "Navy Moving Two Additional BMD Destroyers to Japan," *USNI News*, October 17, 2014, <http://news.usni.org/2014/10/17/navy-moving-two-additional-bmd-destroyers-japan>.

²⁶⁸ Sam LaGrone, "Upgraded Cruiser USS Chancellorsville Arrives in Japan for Forward Deployment," *USNI News*, June 18, 2015, <http://news.usni.org/2015/06/18/upgraded-cruiser-uss-chancellorsville-arrives-in-japan-for-forward-deployment>.

²⁶⁹ LaGrone, "Navy Moving Two Additional BMD Destroyers to Japan."

submarine in the region reinforces the capabilities of the United States to partner nations.²⁷⁰

C. CONCLUSION

The United States has an obligation to maintain freedom of the seas. The PLAN has demonstrated assertive behavior in the region, and its submarine modernization could allow for greater anxiety in the region. In response, the United States has shifted its forces and adjusted policies because of the PLAN's increased military capacity. These two powers will not see security situations in the same light, and to prevent a security dilemma, both states seek ways to alleviate tensions in the region.

²⁷⁰ "USS Topeka Arrives in Guam Homeport," accessed February 17, 2016, <http://www.cpf.navy.mil/news.aspx/030545>.

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VI. RECOMMENDATIONS AND CONCLUSION

As India, Japan, and the United States move forward in a complex and interconnected world, their thinking and strategies with regard to China must be carefully planned. Chinese leaders do not think or see problem sets the same way the other states' leaders do. As China and the United States both desire to maintain their military superiority in East Asia, they also should find areas to cooperate to foster some trust that may improve their relationship. In the meantime, the United States and its allies should continue to have a balanced approach concerning China. This section discusses hard-hedging recommendations followed by soft-hedging recommendations.

A. U.S. HARD HEDGING

If the United States wants to prevent China from accomplishing A2/AD, it must have some options that would counter the tactic. The United States has several options, and two options could limit an arms race, which would also be cost efficient. The first is for the United States to invest in SSK submarines. The U.S. Navy's submarine inventory consists of only nuclear-powered submarines, which are costly compared to an SSK submarine. The Virginia-Class (SSN), which began commissioning in 2004, costs approximately \$2 billion per submarine.²⁷¹ Meanwhile, Vietnam signed a deal to acquire six SSKs from Russia for roughly the same price.²⁷² If the United States had a small fleet of SSKs in this region, it would allow it to patrol larger areas, and possibly, disrupt the PLAN's operations. This fleet could patrol key egress points, as well as major ports offering the capability to intercept the enemy quickly and confusing enemy planning and operations.²⁷³ These submarines should be equipped with AIP technology that would

²⁷¹ Dan Ward, "How Budget Pressure Prompted the Success of Virginia-Class Submarine Program," *U.S. Navy Institute News*, November 3, 2014, <http://news.usni.org/2014/11/03/opinion-budget-pressure-prompted-success-virginia-class-submarine-program>.

²⁷² Greg Torode and Minnie Chan, "Vietnam Buys Submarines to Counter China," *South China Morning Post*, December 17, 2009.

²⁷³ James Clay Moltz, *Submarine and Autonomous Vessel Proliferation: Implications for Future Strategic Stability at Sea* (PASCC Report Number 2012 021) (Monterey, CA: Naval Postgraduate School, Center on Contemporary Conflict and Defense Threat Reduction Agency, 2012), <https://www.hsdl.org/?view&did=731571>.

enhance the undersea operations of the United States in a cost effective manner. These submarines would also potentially demonstrate to China that the United States would not want to compete in an arms race, but rather would like to see tensions de-escalate in the region. Further research should be accomplished to detail fully the cost associated with the logistics of a SSK fleet.

A second option for the United States is to consider a military alliance with India. Both states have similar regional interests, and this relationship could benefit both sides. Indian Prime Minister Modi suggests that the future relationship between these two countries has the potential for a greater capacity when he states, “India and the United States of America are bound together, by history and by culture. These ties will deepen further.”²⁷⁴ One aspect of this alliance should be for the United States to promote SSK support to India, as demonstrating to China that it is not interested in an arms race. This alliance and the creation of a SSK fleet for the United States should be further examined to provide the United States options.

B. U.S. AND JAPAN HARD HEDGING

While India and the United States have never had an alliance, the United States and Japan have had an alliance since 1951. As the United States has had its policies “rebalance” to Asia, the U.S.-Japan Alliance should also be rebalanced. The alliance should be examined to further assess situations in which the JMSDF could increase its participation. One way is for the United States and the JMSDF to participate in bilateral maritime patrols. The JMSDF participates in joint training and exercises, but they do not conduct actual joint missions.²⁷⁵ Japanese Admiral Katsutoshi Kawano, chief of the Joint Staff of the JSDF, states that China’s actions in the China Seas causes serious concerns for his forces and he believes that the United States and the JMSDF should consider

²⁷⁴ Arun Kumar, “Modi Confident India, US Can Develop a Genuinely Strategic Alliance,” *IANS English*, September 21, 2014, <http://search.proquest.com.libproxy.nps.edu/docview/1563884432/abstract/CEE3CCAFDF874C4EPQ/1>.

²⁷⁵ Kyle Mizokami, “Essay: Understanding Japan’s Shifting Defense Policy,” *USNI News*, August 20, 2015, <http://news.usni.org/2015/08/20/essay-understanding-japans-shifting-defense-policy>.

performing joint missions.²⁷⁶ These missions should be joint patrols of the South China Sea that would allow Japan to contribute to the protection of freedom of navigation.²⁷⁷ These joint operations would demonstrate to China that more ASW assets are cooperating that could complicate its A2/AD plans and operations.

Another option would be for the JMSDF to procure a more robust SSK fleet. This fleet could either cooperate with the suggested U.S. SSK fleet or be a substitute option. The JMSDF is slated to be composed of only 22 submarines; this fleet could be two or three times as large to aid the undersea domain better.

C. INDIA HARD HEDGING

The IN has spent a considerable amount of energy and money funding its first SSN and SSBN. If India is worried that the PLAN's submarines will continue to operate in or near the Indian Ocean, preventing India the freedom of the seas, then the IN should invest in more SSKs by utilizing AIP technology. If the IN flooded the waters with a SSK fleet, it could have a constant presence and awareness of all operations occurring in the Indian Ocean. The PLAN would then realize the IN may not have the capacity to challenge the PLAN directly, but would be countering the PLAN.

D. SOFT HEDGING

The United States, India, and Japan should not only focus on military tactics and operations to counter the PLAN, they also need to improve dialogue among states to minimize misunderstandings and to understand intentions better. One way to improve this dialogue is to invite the PLAN to act as an observer for military exercises with the future option of becoming an active participant. In October 2015, the United States, India, and Japan all participated in Exercise MALABAR in the Bay of Bengal.²⁷⁸ While this

²⁷⁶ Yuka Hayashi and Chieko Tsunoka, "Japan Open to Joining U.S. in South China Sea Patrols," *The Wall Street Journal*, June 25, 2015, <http://www.wsj.com/articles/japan-may-join-u-s-in-south-china-sea-patrols-1435149493>.

²⁷⁷ Prashanth Parameswaran, "US-Japan Joint Patrols in the South China Sea?," *The Diplomat*, May 1, 2015, <http://thediplomat.com/2015/05/us-japan-joint-patrols-in-the-south-china-sea/>.

²⁷⁸ Pranav Kulkarni, "Significance of the India-US-Japan Malabar Naval Exercise," *The Indian Express*, October 21, 2015, <http://indianexpress.com/article/explained/significance-of-the-india-us-japan-malabar-naval-exercise/>.

exercise has value for the three states, it raised concerns for China and the PLAN. China may see this exercise as a way to contain the PLAN. By inviting China to act an observer, dialogue could increase regarding maritime issues and military intentions. The United States may also request to be an observer during Sino-Russian naval exercises as *quid pro quo*.

In addition to this exercise, the United States should increase its own bilateral military exercises with the PLAN to demonstrate that cooperation is possible. The United States and the PLAN have broken ground in this area, when the PLAN participated in RIMPAC 2014, and then in 2015, when PLAN ships made port calls to the Broadway Pier in San Diego and to Naval Station Mayport in Florida. These port calls were an initiative by both China and U.S. leaders to begin more military collaboration.²⁷⁹ However, some members of Congress are skeptical about military exercises with China. Congressman J. Randy Forbes wrote a letter to the U.S. Secretary of Defense, in which he voices his concerns that military cooperation has benefitted China, while the Chinese military continues with aggressive actions against the United States.²⁸⁰ Even though the United States has not seen immediate results from military exercises, it should continue to include China; otherwise, a relationship will never take root, in an effort to build partner capacity. China and the United States should create an annual maritime military event, to include exercises and forums, to foster some type of trust.

E. CONCLUSION

Chinese submarine modernization has caused India, Japan, and the United States to react. The PLAN has increased submarine operations in the region, and with its continued modernization, the maritime domain will likely see an increased frequency of submarine encounters. The three hypothesis presented in this thesis seem to all hold true depending on the viewpoint. The first two hypotheses have been proven through India's viewpoint. India first perceives the PLAN as threatening and destabilizing. India chose to

²⁷⁹ June Chang, "Bridging the Seas," *China Daily*, November 13, 2015, http://usa.chinadaily.com.cn/epaper/2015-11/13/content_22448221.htm.

²⁸⁰ J. Randy Forbes, "China Military Relations," *Congressman J. Randy Forbes*, December 10, 2014, http://forbes.house.gov/uploadedfiles/china_mil.pdf.

respond with the acquisition of a SSBN because of a perceived threat, potentially creating an arms race. India desires to be the dominant power in its region, but its capabilities lag behind the PLAN. To achieve the goal of security in the Indian Ocean, the IN had to acquire a SSBN to challenge the perceived threat. Secondly, India does view that the PLAN possesses the capacity to disrupt SLOCs, and India chose to respond by increasing its own ASW capabilities with its SSN. India's hard hedging may outweigh any type of soft hedging that has been accomplished.

While looking from Japan's viewpoint, all three hypotheses hold true. Japan does see the PLAN's modernization as threatening and destabilizing. Tensions have already increased because of the PLAN's use of submarines, and Japan has acquired a force to counter the PLAN. Regardless of the soft hedging or hard hedging performed by Japan, their tumultuous history seems to weigh heavy on the relationship. Time may be the best treatment, with the hopes that future generations may have the ability to negotiate peaceful cooperation.

As for the United States, the fear of the possibility to disrupt the balance of power seems to be the cause of concern. The first hypothesis does hold true for the United States; the modernization of the PLAN could threaten to prevent it from accomplishing its missions. The United States would like to maintain stability in the world's oceans, and with the CCP in power, the military's intentions are not always clear. Neither one of these super powers would benefit from a military conflict, nor would the region. Continued open dialogue between these states must occur.

As China attempts to shift the balance of power in its favor through submarine modernization in these seas and disputed regions, India, Japan, and the United States can create a balanced approach that could prevent a conflict from occurring. These states have a deeply intertwined history, and because of the varying viewpoints, the current leaders may never come to any consensus. However, even though the states may never fully agree, they can manage expectations. One expectation should be the desire to avoid military conflict and the incentives, including economic relationships, and regional

stability, should be substantial enough to drive these states to seek cooperation vice engagement.²⁸¹

²⁸¹ Atul Chandra, "Indian Navy Procurement Plan," *Force: National Security and Aerospace Newsmagazine*, accessed October 30, 2015, http://www.forceindia.net/newsyoucanuse_indian_navy_procurement_plan.aspx.

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